

ADB

# ERD Working Paper

ECONOMICS AND RESEARCH DEPARTMENT

## SERIES

### No. 54

## Practices of Poverty Measurement and Poverty Profile of Bangladesh

Faizuddin Ahmed

August 2004

Asian Development Bank

<http://www.adb.org/Economics>

**ERD Working Paper No. 54**

# **Practices of Poverty Measurement and Poverty Profile of Bangladesh**

**FAIZUDDIN AHMED**

August 2004

Faizuddin Ahmed is Project Director of the Bangladesh Bureau of Statistics. This paper was prepared for RETA 5917: Building a Poverty Database under the Development Indicators Policy Research Division of the Economics and Research Department, Asian Development Bank.

Asian Development Bank  
P.O. Box 789  
0980 Manila  
Philippines

©2004 by Asian Development Bank  
August 2004  
ISSN 1655-5252

The views expressed in this paper  
are those of the author(s) and do not  
necessarily reflect the views or policies  
of the Asian Development Bank.

## **FOREWORD**

The ERD Working Paper Series is a forum for ongoing and recently completed research and policy studies undertaken in the Asian Development Bank or on its behalf. The Series is a quick-disseminating, informal publication meant to stimulate discussion and elicit feedback. Papers published under this Series could subsequently be revised for publication as articles in professional journals or chapters in books.

## CONTENTS

Abstract	vii
I. Introduction	1
II. Data Sources	2
A. Household Expenditure Survey 1995-1996	2
B. Household Income & Expenditure Survey 2000	2
C. Poverty Monitoring Survey 1999	3
III. Income and Expenditure Distribution	3
A. Household Income, Expenditure, and Consumption Expenditure	4
B. Food and Nofood Expenditure	5
C. Household Consumption Expenditure by Major Groups	5
D. Distribution of Income	6
E. Distribution of Expenditure	8
F. Quintile Distribution of Per Capita Expenditure	9
IV. Poverty Lines	10
A. The DCI Method and the FEI Method	10
B. The CBN Method	11
V. Poverty Estimates: National and Subnational Levels	12
A. Head Count Ratio at the National Level	12
B. Head Count Ratio by Division	12
C. Poverty Gap at the National Level	13
D. Poverty Gap by Division	13
E. Squared Poverty Gap at the National Level	14
F. Squared Poverty Gap by Division	14

VI.	Nonincome Indicators of Poverty	15
VII.	Quality of Data	16
VIII.	Conclusion	17
	APPENDIX A: Cost of Basic Needs Method	19
	APPENDIX B: Price Indices and Other Indicators	22
	APPENDIX C: Poverty Profile from Poverty Monitoring Survey 1999	24
	REFERENCES	

## **ABSTRACT**

The present paper discusses the poverty measurement techniques being used in and the poverty profile of Bangladesh. Data used in the paper are mainly taken from two national surveys: Household Income and Expenditure Survey (HIES) and Poverty Monitoring Survey (PMS) conducted by Bangladesh Bureau of Statistics (BBS). Poverty in Bangladesh was earlier measured by direct calorie intake (DCI) method. The food energy intake (FEI) method was first used in the Poverty Monitoring Survey 1995. The cost of basic need (CBN) method was first used in HIES 1995-1996 and then in HIES-2000.

Findings from the surveys indicate that the incidence of poverty has declined over the years. The Foster-Greer-Thorbecke class of poverty estimates also indicate reduction of the poverty head count ratio, poverty gap, and squared poverty gap in the recent past. The distribution of income and expenditure shows that though nominal income has increased, income distribution has become skewed with high concentration of income in the highest decile and comparatively lower income share in the lowest decile. The quintile distribution of income also shows similar evidence. With respect to nonincome indicators, infant mortality rate has declined, life expectancy has increased, and enrollment in primary and secondary levels has increased.

## I. INTRODUCTION

Poverty refers to forms of economic, social, and psychological deprivation among people arising from a lack of ownership and control of or access to resources for the attainment of a required minimum level of living. It is a multidimensional problem involving a deficiency of income, consumption, nutrition, health, education, housing, etc.

The purpose of this paper is to describe and analyze data pertaining to poverty in Bangladesh—how it is collected, how poverty is measured—in order to facilitate the work of researchers, planners, administrators, policymakers, and donors in finding appropriate measures for poverty alleviation in Bangladesh.

There are several measures of poverty, all of them belonging to the so-called Foster-Greer-Thorbecke (FGT) poverty indices (Foster et al. 1984). One of them is the simple and popular index widely known as the head count index. Others are the poverty gap and squared poverty gap measures. All these measures need a poverty line for their computation. Three methods are used in Bangladesh for poverty line estimation. These are the direct calorie intake method (DCI), the food energy intake method (FEI), and the cost of basic needs method (CBN).

The Bangladesh Bureau of Statistics (BBS) of the Planning Division under the Ministry of Planning is the organization mandated by law to collect, compile, and disseminate statistics of importance. The BBS has conducted Household Expenditure Surveys (HES) since 1963-1964. After modifying the HES by adding more questions on income, the survey was renamed Household Income and Expenditure Survey (HIES) in 2000.<sup>1</sup> So far, BBS has conducted 13 rounds of the HIES. In the mid-1990s BBS started another survey, this time focusing on poverty. The survey was called Poverty Monitoring Survey (PMS). By 1999, seven rounds of the PMS survey had been completed.

The latest HIES, conducted during February 2000 through January 2001, indicates that rural poverty in Bangladesh has declined since the HES survey of 1995-1996. However, urban poverty has increased in the same period.

The paper samples data from three surveys: HES 1985-1996, PMS 1999, and HIES 2000. The next section of the paper discusses data sources. Section III discusses income and expenditure distribution, Section IV discusses the poverty line, and Section V discusses poverty estimates at national and subnational levels. Section VI discusses nonincome indicators of poverty and Section VII discusses the quality of survey data. The last section summarizes the findings of the study.

---

<sup>1</sup> Although HES also had an income module, more emphasis on income is given in the HIES.



## II. DATA SOURCES

The main source of poverty-related data in Bangladesh is the HIES, earlier known as HES. The latest HIES was conducted in 2000.<sup>2</sup> Another source is the PMS, which focuses exclusively on poverty. The PMS was conducted separately for urban and rural areas from 1995 to 1999. The sample designs of HES, HIES, and PMS are described below.

### A. Household Expenditure Survey 1995-1996

A two-stage stratified random sampling technique was followed in drawing the sample of HES 1995-1996 under the framework of the Integrated Multipurpose Sample design developed on the basis of the Population and Housing Census 1991. The sample consists of 372 primary sampling units (PSUs) throughout the country, broken down into 252 rural and 120 urban PSUs. The PSU is defined as contiguous two or more enumeration areas in the Population and Housing Census 1991. Each PSU comprises around 250 households.

In the first stage, a total of 372 PSUs was drawn from the sample frame with probability proportional to size. These PSUs were selected from 14 different strata, of which five were rural and nine urban (including four statistical metropolitan areas and five municipal areas). In the second stage, 20 households were selected from each PSU by systematic random sampling method.

Among the 372 PSUs, one in the Dhaka statistical metropolitan area could not be visited by field teams. As a result, a total of 371 PSUs were covered, 119 in urban and 252 in rural areas. A total of 7,420 households were interviewed.

### B. Household Income & Expenditure Survey 2000

The sample design adopted for HIES 2000 was the same as that of HES 1995-1996, except only for the addition of questions on income. However the number of PSUs in the statistical metropolitan areas was doubled to 140 instead of 70 as in HES 1995-1996. At the same time the number of households in each of these PSUs was reduced to one half of the number in the HES, i.e., only 10 households instead of 20. Thus the number of sample households remained the same for both the surveys but the number of PSUs increased from 372 to 442. Table 1 presents the distribution of sample PSUs and sample households by division and residence.

---

<sup>2</sup> For the 1990s, there were two HES: 1991-1992 and 1995-1996. The results of the 1991-1992 and 1995-1996 surveys have all been published.

**TABLE 1**  
**NUMBER OF SAMPLE PSUs AND HOUSEHOLDS**

DIVISION	HES 1995-1996			HIES 2000		
	NATIONAL	RURAL	URBAN	NATIONAL	RURAL	URBAN
<b>Sample PSUs</b>						
Barisal	36	26	10	36	26	10
Chittagong	86	60	26	102	60	42
Dhaka	113	69	44	149	69	80
Khulna	48	29	19	59	29	30
Rajshahi	88	68	20	96	68	28
<b>Total</b>	<b>371</b>	<b>252</b>	<b>119</b>	<b>442</b>	<b>252</b>	<b>190</b>
<b>Sample Households</b>						
Barisal	720	520	200	720	520	200
Chittagong	1720	1200	520	1720	1200	520
Dhaka	2260	1380	880	2280	1380	900
Khulna	960	580	380	960	580	380
Rajshahi	1760	1360	400	1760	1360	400
<b>Total</b>	<b>7420</b>	<b>5040</b>	<b>2380</b>	<b>7440</b>	<b>5040</b>	<b>2400</b>

### C. Poverty Monitoring Survey 1999

A two-stage stratified sampling design was followed in drawing the sample for PMS 1999. The list of the enumeration areas of the 1991 Population Census was used as the sample frame. These enumeration areas were treated as primary sampling units. Each PSU was a cluster of around 100 households. The universe, i.e., the whole country, was divided into two strata: urban and rural. Each of the two strata was further subdivided into 23 substrata, i.e., each of the country's 23 regions formed a separate substratum. Using the 1991 population census frame, a sample of 300 PSUs was allocated to the 23 urban substrata at the first stage. Proportional allocation was made in allocating the PSUs to the 23 regions.

The required number of PSUs was drawn systematically using a random start. All the households in the selected PSUs were listed completely in a listing form. Then a subsample of 20 households was drawn randomly from each selected PSU using a table of random numbers. Thus in the urban universe, there were  $300 \times 20$ , i.e., 6,000 households in the sample. A similar procedure was adopted in drawing the sample from the rural universe except that the number of PSUs selected for the rural universe was 500 and the ultimate sample households  $500 \times 20$ , i.e., 10,000.

## III. INCOME AND EXPENDITURE DISTRIBUTION

Using data collected from various rounds of the HES/HIES, this section deals with average household income, expenditure, and household consumption expenditure by major items of expenditure, and the distribution of income and expenditure to each decile of the households, and related considerations.

## A. Household Income, Expenditure, and Consumption Expenditure

Household income, expenditure, and consumption expenditure from 1985-1986 to 2000 are presented in Table 2. Expenditure refers to total expenditure, including nonrecurring expenditure. On the other hand, consumption expenditure excludes nonrecurring expenses.<sup>3</sup> The table shows that household income and consumption increased gradually over the years. Income increased between 1985-1986 and 1988-1989 by 11.1 percent, between 1988-1989 and 1991-1992 by 16 percent, between 1991-1992 and 1995-1996 by 30.7 percent, and between 1995-1996 and 2000 by 33.8 percent. The corresponding annual rates of increase were 3.7, 5.3, 7.7, and 7.5 percent.

**TABLE 2**  
**MONTHLY HOUSEHOLD NOMINAL INCOME EXPENDITURE AND CONSUMPTION**

SURVEY YEAR	RESIDENCE	HOUSEHOLD SIZE	AVERAGE MONTHLY (TAKA)		
			INCOME	EXPENDITURE	CONSUMPTION EXPENDITURE
2000	National	5.2	5842	4881	4537
	Rural	5.2	4816	4257	3879
	Urban	5.1	9878	7337	7125
1995-96	National	5.3	4366	4096	4026
	Rural	5.3	3658	3473	3426
	Urban	5.3	7973	7274	7084
1991-92	National	5.3	3341	2944	2904
	Rural	5.3	3109	2721	2690
	Urban	5.3	4832	4377	4280
1988-89	National	5.5	2865	2592	2554
	Rural	5.5	2670	2405	2374
	Urban	5.6	4223	3900	3816
1985-86	National	5.9	2578	2345	2316
	Rural	5.8	2413	2179	2157
	Urban	6.1	3766	3540	3459

On the other hand expenditure increased between 1985-1986 and 1988-1989 by 10.5 percent, between 1988-1989 and 1991-1992 by 13.6 percent, between 1991-1992 and 1995-1996 by 39.1 percent, and between 1995-1996 and 2000 by 19.2 percent. Consumption expenditure increased in these years also, between 1985-1986 and 1988-1989 by 13.3 percent, between 1988-1989 and 1991-1992 by 13.7 percent, between 1991-1992 and 1995-1996 by 38.6 percent, and between 1995-1996 and 2000 by 12.7 percent. The annual increases for the corresponding years for consumption expenditure were 4.3, 4.6, 9.7, and 3.2 percent.

<sup>3</sup> Nonrecurring expenditure such as ceremonial expenditure, taxes, and major repairs is excluded from the expenditure to derive consumption expenditures and for this reason consumption expenditure is always less than expenditure.

It can be noticed that the rate of increase in income was higher than the rate of increase in expenditure except for the years 1991-1992 to 1995-1996 when income increased by 30.7 percent whereas expenditure increased by 39.1 percent. Between 1995-1996 and 2000 the excess of the rate of increase of income over the rate of increase of consumption expenditure was substantial—33.8 percent as against only 19.2 percent.

## B. Food and Nonfood Expenditure

The proportion of food and nonfood expenditure changed gradually over the years, as shown in Table 3. Between 1985-1986 and 2000, at the national level the proportion of food declined from 63.3 to 54.6 percent, a fall of 8.7 percentage points. The same trend is evident in both rural and urban areas except that in the rural areas the decline was only 5.8 percentage points. In the urban areas the decline was greater, 10.5 percentage points. These changes suggest that households are increasingly allocating their consumption expenditure to nonfood items.

**TABLE 3**  
**FOOD AND NONFOOD EXPENDITURE AS PERCENTAGE OF HOUSEHOLD CONSUMPTION EXPENDITURES**

SURVEY YEAR	NATIONAL		RURAL		URBAN	
	FOOD	NONFOOD	FOOD	NONFOOD	FOOD	NON-FOOD
2000	54.6	45.4	59.3	40.7	44.6	55.4
1995-1996	57.7	42.3	62.4	37.6	46.3	53.7
1991-1992	66.6	33.4	69.2	30.8	56.1	43.9
1988-1989	65.5	34.2	67.6	32.4	56.1	43.9
1985-1986	63.3	36.7	65.1	34.9	55.1	45.0

## C. Household Consumption Expenditure by Major Groups

The distribution of average monthly household consumption expenditure by major groups of expenditure are presented in Table 4. The table shows that for the nation as a whole, in 2000, the highest expenditure share (54.6 percent) was incurred on food and beverage followed by housing and house rent (9.0 percent), fuel and lighting (6.8 percent), and cloth and footwear (6.3 percent). Miscellaneous items took up 20.3 percent. The percentages for the rural areas were 59.3 percent for food and beverage, 7.2 percent for fuel and lighting, 6.5 percent for clothing and footwear, 5.7 percent for housing and house rent, 1.2 percent for household effects, and 18.2 percent for miscellaneous items. For the urban areas, the percentages were 44.6 percent for food and beverage 16.0 percent for housing and house rent, 6.0 percent for fuel and lighting, 1.8 percent for household effects, and 24.8 percent for miscellaneous items.

**TABLE 4**  
**PERCENTAGE DISTRIBUTION OF AVERAGE MONTHLY HOUSEHOLD CONSUMPTION EXPENDITURE BY MAJOR GROUP**

YEAR AND RESIDENCE	AVERAGE CONSUMPTION EXPENDITURE	HOUSE-HOLD SIZE	TOTAL	FOOD AND BEVERAGE	CLOTHING AND FOOTWEAR	HOUSING AND HOUSE RENT	FUEL AND LIGHTING	HOUSE-HOLD EFFECT	MISCEL-LANEOUS
2000									
National	4537	5.2	100.00	54.60	6.28	9.00	6.81	1.41	20.32
Rural	3879	5.2	100.00	59.29	6.53	5.70	7.19	1.22	18.23
Urban	7125	5.1	100.00	44.55	5.73	16.05	6.00	1.81	24.80
1995-1996									
National	4026	5.3	100.00	57.74	6.49	11.05	5.59	1.90	17.23
Rural	3426	5.3	100.00	62.40	6.47	8.49	5.98	1.72	14.93
Urban	7084	5.3	100.00	46.27	6.53	17.34	4.63	2.32	22.91
1991-1992									
National	2904	5.3	100.00	66.58	4.70	10.43	5.62	0.92	11.75
Rural	2690	5.3	100.00	69.19	4.79	8.94	5.47	0.86	10.75
Urban	4280	5.3	100.00	56.07	4.34	16.44	6.20	1.15	15.80
1988-1989									
National	2555	5.5	100.00	65.45	5.55	9.64	5.79	1.35	12.22
Rural	2374	5.5	100.00	67.63	5.62	8.09	5.88	1.29	11.49
Urban	3816	5.6	100.00	56.11	5.24	16.29	5.39	1.62	15.34
1985-1986									
National	2316	5.9	100.00	63.26	5.92	8.85	8.39	1.40	12.18
Rural	2157	5.8	100.00	65.08	5.91	7.36	8.97	1.22	11.46
Urban	3459	6.1	100.00	55.05	5.95	15.61	5.78	2.20	15.42

## D. Distribution of Income

Table 5 reveals a steady deterioration in the distribution of income to households. In 1988-1989, the lowest 5 percent of households received 1.1 percent of total income. This share was down to 0.9 percent in 2000. In contrast the share of the top 5 percent of households increased from 20.5 percent in 1988-1989 to 28.6 percent in 2000. This is saying that while the income of the lowest 5 percent of households was equal to 5 percent of the income of the top 5 percent of households in 1988-1989, it was down to 3.2 percent in 2000.

**TABLE 5**  
**DISTRIBUTION OF HOUSEHOLD INCOME AND GINI COEFFICIENTS**

HOUSEHOLD INCOME IN DECILES AND GINI COEFFICIENT	2000	1995-96	1991-92	1988-89
<b>Total National</b>	<b>100.00</b>	<b>100.0</b>	<b>100.00</b>	<b>100.00</b>
Lowest 5%	0.92	0.88	1.03	1.06
Decile-1	2.40	2.24	2.58	2.64
Decile-2	3.75	3.47	3.94	4.00
Decile-3	4.45	4.46	4.95	4.96
Decile-4	5.23	5.37	5.94	5.93
Decile-5	6.09	6.35	7.08	6.95
Decile-6	7.08	7.53	8.45	8.10
Decile-7	8.44	9.15	10.09	9.61
Decile-8	10.35	11.35	12.10	11.62
Decile-9	13.93	15.40	15.64	15.20
Decile-10	38.14	34.68	29.23	31.00
Top 5%	28.66	23.62	18.85	20.51
Gini Coefficient	0.417	0.432	0.388	0.379
<b>Total Rural</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Lowest 5%	1.06	1.00	1.07	1.10
Decile-1	2.77	2.56	2.67	2.74
Decile-2	4.32	3.93	4.07	4.13
Decile-3	5.23	4.97	5.10	5.10
Decile-4	5.95	5.97	6.05	6.05
Decile-5	6.82	6.98	7.21	7.21
Decile-6	7.85	8.16	8.57	8.25
Decile-7	9.07	9.75	10.28	9.69
Decile-8	10.91	11.87	12.30	11.74
Decile-9	14.07	15.58	15.71	15.10
Decile-10	32.95	30.23	28.04	30.08
Top 5%	24.12	19.73	17.80	19.81
Gini Coefficient	0.366	0.384	0.364	0.368
<b>Total- Urban</b>	<b>100.00</b>	<b>100.00</b>	<b>100.0</b>	<b>100.0</b>
Lowest 5%	0.77	0.74	1.09	1.12
Decile-1	1.99	1.92	2.64	2.76
Decile-2	3.05	3.20	4.06	4.05
Decile-3	3.84	4.06	5.01	4.91
Decile-4	4.65	4.98	5.88	5.80
Decile-5	5.58	6.97	6.80	6.84
Decile-6	6.67	7.20	8.11	7.91
Decile-7	8.24	8.98	9.66	9.42
Decile-8	10.40	11.35	11.77	11.57
Decile-9	13.92	16.29	15.64	15.56
Decile-10	41.62	36.05	30.43	31.19
Top 5%	32.40	24.30	19.42	20.02
Gini Coefficient	0.452	0.444	0.398	0.381

The same trend of deterioration is evident when larger brackets are examined. In 1988-1989, the lowest 30 percent of households received incomes equal to 37 percent of the income of the top 10 percent of households. This was down to 28 percent in 2000.

The Gini coefficient tells the same story. This was 0.379 in 1988-1989 and 0.417 in 2000.

Much the same trend can be seen in the rural and urban areas, although the decline was less sharp in the rural areas. In the rural areas, the lowest 5 percent of households received 1.1 percent of total income in 1988-1989 and only 1.1 percent in 2000. The opposite is true for the top 5 percent of households, which received 19.8 percent of income in 1988-1989 and 24.1 percent in 2000. The Gini coefficient fell slightly, from 0.368 in 1988-1989 to 0.366 in 2000. If the deterioration was only slight in the rural areas, it was glaring in the urban areas. Here, the lowest 5 percent of the households received an income of 1.1 percent of total in 1988-1989 but only 0.8 percent in 2000. On the other hand, the top 5 percent of households increased their share of 20.0 percent in 1988-1989 to 32.4 percent in 2000. The Gini coefficient rose from 0.381 in 1988-1989 to 0.452 in 2000.

Altogether, the data indicate that the inequality of income distribution widened in the country, particularly in the urban areas. The high incidence of poverty in the urban areas supports this fact.

## **E. Distribution of Expenditure**

The distribution of household expenditure by decile in 2000 is presented in Table 6. The table shows that the expenditure accruing to the lowest decile was 3.6 percent while for the top decile the expenditure was 28.2 percent. In other words, the expenditure of the lowest decile was only 13 percent of the top decile's. Even if the lowest three deciles are counted, their expenditure of 13.9 percent of total expenditure constitutes only 49 percent of the expenditure of the top decile. In the rural areas, the picture is less lopsided. Here the lowest decile expended 4.0 percent of total expenditure as against 24.9 percent by the top decile. The expenditure of the three lowest deciles amounting to 15.3 percent of total represents 61 percent of the expenditure of the top decile. The situation is much less rosy in the urban areas where the expenditure of 2.9 percent of the lowest decile compares with the 30.3 percent of the highest decile. In fact, the expenditure of the lowest three deciles amounting to 11.9 percent of total constitutes only 39 percent of the expenditure of the top decile.

The Gini coefficient for 2000 was 0.32 for the nation as a whole, and the weighted average was 0.28 for the rural areas and 0.34 for the urban areas.

**TABLE 6**  
**DISTRIBUTION OF HOUSEHOLD EXPENDITURE, 2000**

DECILES	NATIONAL	RURAL	URBAN
Decile-1	3.58	3.99	2.94
Decile-2	4.75	5.26	4.01
Decile-3	5.54	6.07	4.92
Decile-4	6.37	6.90	5.79
Decile-5	7.25	7.81	6.82
Decile-6	8.24	8.77	8.21
Decile-7	9.61	9.99	9.89
Decile-8	11.52	11.79	11.84
Decile-9	14.89	14.46	15.24
Decile-10	28.22	24.91	30.31
Gini Coefficient	0.32	0.28	0.34

## F. Quintile Distribution of Per Capita Expenditure

The quintile distribution of per capita monthly consumption expenditure is presented in Table 7. The table shows that per capita monthly nominal consumption expenditure of each quintile increased over the years: from Tk 272 in 1991-1992 to Tk 378 in 2000 for the lowest quintile; and from Tk 1017 in 1991-1992 to Tk 1841 in 2000 for the top quintile. While the expenditure increased, its distribution became more uneven, however. The expenditure of 23.5 percent of total of the two lowest quintiles in 1991-1992 went down to 21.2 percent in 1995-1995 and to 20.7 percent in 2000. In contrast the share of the top quintile went up from 36.4 percent in 1991-1992 to 42.5 percent in 1995-1996 and stabilized at 42.0 percent in 2000.

**TABLE 7**  
**QUINTILE DISTRIBUTION OF PER CAPITA MONTHLY CONSUMPTION EXPENDITURE**

QUINTILE	1991-92		1995-96		2000	
	TAKA	PERCENT	TAKA	PERCENT	TAKA	PERCENT
1	272	9.7	335	8.7	378	8.6
2	387	13.8	476	12.5	530	12.1
3	493	17.6	599	15.7	683	15.6
4	628	22.4	787	20.6	917	20.9
5	1017	36.4	1621	42.5	1841	42.0
Total	550	100.0	764	100.0	876	100.0



## IV. POVERTY LINES

Bangladesh has used all commonly known approaches to the setting of poverty lines, i.e., direct calorie intake, food energy intake, and cost-of-basic needs methods. Since the mid-1990s the government has used the CBN method.<sup>4</sup> Independent researchers favor the CBN method.

### A. The DCI Method and the FEI Method

The earliest official poverty estimates in Bangladesh were made through the use of the DCI method. Using this method, poor households were defined as those with per capita energy intake less than the standard per capita requirement of energy. Reviews made of the DCI method conclude that it results in a consistent poverty line in terms of reflecting the same nutrient intake. The number and percentage of poor are also easy to understand because of the simplicity and transparency of the standard used. However, it is said that the DCI measures “undernourishment” and not poverty. The latter entails deprivation in all aspects of welfare and not just in calorie intake.

More recently, the FEI method has been used officially along with the DCI method. The FEI method sets the poverty line as the income or consumption level at which “basic needs” are met. It estimates the poverty line on the basis of the empirical relationship between food energy intakes and consumption expenditure. This method, like the DCI method, is consistent in terms of calorie intake, since individuals at the poverty line, on average, have the same food energy intake. But this poverty line, when converted into expenditure levels, has a consistency problem. Instead of representing a consistent cut-off that should differ only with the cost of a fixed basic needs bundle, the expenditure level is in fact a revealed preference based on different market conditions where individuals operate. For instance, it is possible that because per capita expenditure in richer areas tends to be higher than in the poorer areas, the resulting poverty lines, even when using the same benchmark calorie requirement, will tend to be higher in the former. While the difference may be due to the fact that prices are generally higher in more progressive areas, preference for superior or more expensive sources of calories and other items of expenditure also pulls the poverty line upward (Ravallion and Sen 1994).

It is worth mentioning that there exists a distinct difference between the DCI method and FEI method. Under the DCI method data collected from the households on food consumption (quantities) are converted to calorie by multiplying each food item consumed by that household by its corresponding calorie content. The conversion factor derived by the Institute of Nutrition and Food Science, Dhaka University, is used. The population/households consuming less than 2122 kilocalories (kcal) are defined as poor. On the other hand under the FEI method a poverty line expenditure is determined on the basis of the threshold calorie intake of 2122 kcal from the food and nonfood expenditure using the semi-log model:  $\ln(y) = a + b \cdot x$  where  $y$  is the per capita expenditure per month (food + nonfood) and  $x$  is the per capita calorie intake per day.

---

<sup>4</sup> The poverty estimates from the PMS have been based on the FEI method, however. Therefore, poverty estimates from this survey are not comparable with those derived from the HES/HIES, which have been based on the CBN method.

## B. The CBN Method

The CBN method was introduced in the mid-1990s. This method sets the poverty line by computing the cost of a food basket that enables a household to meet predetermined nutritional requirements, and adds to this an allowance for basic nonfood consumption. The CBN method yields a poverty line that provides for nonfood needs and is consistent in terms of the assumed living standard.

Table 8 shows the poverty lines calculated through the CBN method for the various geographical areas of the country, for the years 1991-1992, 1995-1996, and 2000. These are the poverty lines currently being used in Bangladesh.

**TABLE 8**  
**CBN POVERTY LINES (PER CAPITA, PER MONTH)**

GEOGRAPHIC AREA	1991-92		1995-96		2000	
	ZL	ZU	ZL	ZU	ZL	ZU
SMA Dhaka	480	660	574	791	649	893
Other Urban Dhaka	399	482	480	580	521	629
Rural Dhaka	425	512	492	593	548	659
Rural Faridpur Tangail Jamalpur	432	472	484	529	540	591
SMA Chittagong	523	722	627	867	702	971
Other urban Chittagong	517	609	619	730	694	818
Rural Sylhet Comilla	432	558	499	644	572	738
Rural Noakhali Chittagong	438	541	522	645	582	719
Urban Khulna	482	635	552	727	609	803
Rural Barishal Pathuakali	413	467	494	558	546	616
Rural Khulna Jessore Kushtia	420	497	499	592	527	624
Urban Rajshahi	446	582	496	647	557	726
Rural Rajshahi Pabna	459	540	535	630	586	690
Rural Bogra Rangpur Dinajpur	426	487	468	535	510	582

Note: SMA means statistical metropolitan area.

Note that there are two poverty lines, the “lower” and the “upper” poverty lines. Both consist of the same amount of food items but differ in the amount allowed for nonfood items. The “upper” lines embrace a more generous allowance for nonfood items than the “lower” lines. See Appendix A for technical details.

The government policy document entitled “Bangladesh: A National Strategy for Economic Growth, Poverty Reduction and Social Development” (EG-PRSD) used the above CBN poverty estimates (Bangladesh Economic Relations Division 2003).

A World Bank poverty report in 1998 (World Bank 1998) uses the CBN method by valuing a consumption bundle that meets a predetermined and fixed basic needs standard. Price differentials over time and across areas are taken into account by costing the food items in the fixed bundle using area-specific prices prevailing each year. (See Tables of Appendix B for some of the price

indices and deflators used.) Nonfood allowances are also based on area-specific and actual nonfood expenditures. The CBN method, however, poses more data requirements than the DCI and FEI methods. Quantities consumed and prices paid by the poor for the food items consumed have to be computed. Further, the use of a fixed food bundle is contrary to the welfare-maximizing behavior of consumers. Consumers change their preferences when confronted by different sets of prices as they try to optimize utility and, therefore, maximize welfare (BBS 1998).

Finally, the assumption of a fixed consumption bundle is not representative of the consumption behavior of the poor. From actual findings of household surveys, the food consumption of the urban and rural poor differs substantially from the fixed food bundle. The FEI method, on the other hand, by using independent urban and rural samples, is able to take into account urban and rural variations in food consumption of households for the estimation of the poverty line (BBS 1998).

## **V. POVERTY ESTIMATES: NATIONAL AND SUBNATIONAL LEVELS**

The poverty lines reported here are the “upper” poverty lines, i.e., the poverty lines that give a more generous allowance for nonfood items compared to the so-called “lower” poverty lines (see Table 8). Head count ratios are given for the nation as a whole and for specific geographical areas of the country.

### **A. Head Count Ratio at the National Level**

Applying the poverty lines calculated through the CBN method as shown in Table 8, the number of households whose consumption expenditure falls below the cost of 2122 kcal of food per person per month and the cost of nonfood essentials can be ascertained. This is called the head count ratio, also called the poverty incidence.

Head count ratios using the upper poverty lines are presented in Table 9. The figures are given for the country as a whole and for the country’s five major divisions. The table shows that the poverty head count ratio at the national level as well as in the rural areas decreased, whereas it increased in the urban areas from 1995-1996 to 2000. In the national level, the ratio was 51.0 percent in 1995-1996 and 49.8 percent in 2000. In the rural areas, the reduction is more prominent with the poverty head count ratio falling from 55.3 percent in 1995-1996 to 53.1 percent in 2000. On the other hand, the poverty head count ratio in the urban areas increased from 29.5 percent in 1995-1996 to 36.6 percent in 2000.

### **B. Head Count Ratio by Division**

Looking at the divisions, it can be seen that the head count ratio of the poor is highest in Rajshahi (61.8 percent in 1995-1996 and 61.0 percent in 2000). In contrast, the incidence of poverty is lowest in Barisal (49.9 percent in 1995-1996 and 39.8 percent in 2000) and Dhaka (40.2 percent in 1995-1996 and 44.8 percent in 2000).

**TABLE 9**  
**HEAD COUNT RATIO BY DIVISION**

DIVISION	2000			1995-96		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
National	49.8	36.6	53.1	51.0	29.5	55.3
Barisal	39.8	37.9	40.0	49.9	44.4	50.2
Chittagong	47.7	44.0	48.4	52.4	40.8	54.0
Dhaka	44.8	28.2	52.9	40.2	18.4	48.5
Khulna	51.4	47.1	52.2	55.0	48.7	56.0
Rajshahi	61.0	48.1	62.8	61.8	36.8	65.0

Both in 2000 and 1995-1996 the lowest incidences of poverty in urban areas were observed in Dhaka, where the head count indices were 28.2 and 18.4 percent, respectively. The highest incidences of poverty in the urban area during 2000 and in 1995-1996 were in Rajshahi (48.1 percent) and Khulna (47.8 percent).

In the rural areas, the lowest incidences of poverty were observed in Barisal (40.0 percent) in 2000 and Dhaka (48.5 percent) in 1995-1996.

On the other hand, the highest incidences during these two periods were observed in Rajshahi, where the incidences were 62.8 percent in 2000 and 65.0 percent in 1995-1996.

### C. Poverty Gap at the National Level

Poverty gap is the shortfall in consumption expenditure necessary for a household to just exactly reach the poverty line. Poverty gaps at the national level and the country's five major geographical divisions, broken down into rural and urban areas, are presented in Table 10. The poverty gap followed the same direction as the head count ratio—a decrease in the nation as a whole and particularly in the rural areas, but an increase in the urban areas. At the national level it fell from 13.3 percent in 1995-1996 to 12.9 percent in 2000. In the rural areas it fell from 14.6 to 13.8 percent in the same period. On the other hand, it increased from 7.2 percent in 1995-1996 to 9.5 percent in 2000 in the urban areas.

### D. Poverty Gap by Division

Scanning now the divisions, the improvement in poverty reduction can be seen in all divisions except Dhaka. From 1995-1996 to 2000, the poverty gap fell in Barisal Division from 12.9 to 8.9 percent; in Chittagong from 13.1 to 11.5 percent; in Khulna from 13.9 to 12.7 percent; and in Rajshahi from 17.8 to 17.7 percent. Only in Dhaka did it increase, from 10.1 to 11.5 percent. The same general reduction of the poverty gap is evident in the rural and urban areas of all the divisions except Dhaka. In Dhaka an increase in the poverty gap is evident in both rural and urban areas.

**TABLE 10**  
**POVERTY GAP BY DIVISION**

DIVISION	2000			1995-96		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
National	12.9	9.5	13.8	13.3	7.2	14.6
Barisal	8.9	9.8	8.8	12.9	14.6	12.8
Chittagong	11.5	11.1	11.6	13.1	9.0	13.7
Dhaka	11.5	6.6	13.8	10.1	4.1	12.2
Khulna	12.7	13.3	12.6	13.9	14.2	13.8
Rajshahi	17.7	14.6	18.1	17.8	9.3	18.9

## E. Squared Poverty Gap at the National Level

The squared poverty gap, which measures the severity of poverty, is shown in Table 11. The squared poverty gap declined between the two survey periods of 1995-1996 and 2000. At the national level, it fell from 4.8 percent in 1995-1996 to 4.5 percent in 2000. In the rural areas the gap declined from 5.3 percent in 1995-1996 to 4.8 percent in 2000. However, the poverty gap for the urban area increased from 2.5 to 3.4 percent between 1995-1996 through 2000.

## F. Squared Poverty Gap by Division

The same trends shown by the poverty gap and the head count ratio are displayed by the squared poverty gap (Table 11). The squared poverty gap declined for the country as a whole from 4.8 in 1995-1996 to 4.5 in 2000. It followed the same trend in the divisions except only in Dhaka where it went up, from 3.6 in 1995-1996 to 3.8 in 2000.

**TABLE 11**  
**SQUARED POVERTY GAP BY DIVISION**

DIVISION	2000			1995-96		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
National	4.5	3.4	4.8	4.8	2.5	5.3
Barisal	2.8	3.8	2.7	4.5	6.5	4.4
Chittagong	3.9	4.0	3.9	4.5	2.9	4.7
Dhaka	3.8	2.2	4.5	3.6	1.3	4.4
Khulna	4.2	5.1	4.0	4.9	5.8	4.7
Rajshahi	6.9	5.9	7.0	6.9	3.2	7.4

In the rural areas, the squared poverty gap was lowest in Barisal (2.7 percent) in 2000 and in Dhaka and Barisal (4.4 percent) in 1995-1996. On the other hand, the squared poverty gap was highest in Rajshahi, 7.0 and 7.4 percent in 2000 and 1995-1996, respectively.

For other data on the incidence of poverty obtained from the 1999 PMS, see Tables of Appendix C.

## VI. NONINCOME INDICATORS OF POVERTY

In addition to income, there are nonincome indicators of poverty. Two of these are the infant mortality rate and the school enrolment ratio. The infant mortality rate reflects the state of the primary health care system of the country and the pace of its improvement over time while the school enrolment ratio indicates the extent to which the country is able to deliver universal education to its people. The infant mortality rate in Bangladesh is shown in Table 12.

The infant mortality rate, defined as the number of deaths per 1,000 live births, declined markedly over the decade. It was 94 in 1994 and down to 56 in 2001. The decline was true for each of the sexes. The rate was 98 down to 58 for boys, and 91 down to 55 for girls. This can be ascribed no doubt to the improvement of the maternal health care system in the country in the last decade.

**TABLE 12**  
**INFANT MORTALITY RATE IN BANGLADESH**

YEAR	BOTH SEXES	MALE	FEMALE
1990	94	98	91
1994	77	77	76
1995	71	73	70
1996	67	68	66
1997	60	61	59
1998	57	58	56
1999	59	61	57
2000	58	59	57
2001	56	58	55

The net school enrolment ratio, defined as the number of children in school belonging to the officially prescribed school age relative to the total number of children belonging to that prescribed age, is shown in Table 13. For children aged 6-10 years, the net school enrolment ratio was 60 percent in 1990 and up to 78 percent in 1999. In fact the ratio reached its highest, 82 percent, in 1997. Though improving, the ratio can be said to be on the low side, considering that, except in extraordinary cases, all children of school age should be in school. In other words, the ratio should in theory approach 100 percent.

The ratio for each of the sexes followed the same trend. For male pupils, it went up from 59 to 77 percent; for female pupils, it went up from 60 to 80 percent.

**TABLE 13**  
**NET ENROLMENT RATIO OF CHILDREN IN BANGLADESH**

YEAR	BOTH SEXES	MALE	FEMALE
1990	94	98	91
1994	77	77	76
1995	71	73	70
1996	67	68	66
Aged 6-10 years			
1990	60	59	60
1994	81	83	81
1995	82	82	82
1996	79	79	79
1997	82	80	83
1998	–	–	–
1999	78	77	80
Aged 11-15 years			
1995-96	63.7	61.6	66.2
2000	65.3	59.4	71.5

For children 11-15 years of age, the ratio is lower than that for younger pupils as well as somewhat more stable. It was 63.7 percent in 1995-1996, up to 65.33 percent in 2000. The trend and level, separately for male and female, are different. For males, the ratio was 61.6 down to 59.4 percent between the reference years. For females, the ratio was both higher as well as upward, at 66.2 percent in 1995-1996 and 71.5 percent in 2000. The increase in the female ratio is particularly noteworthy. It indicates an improving as well as higher retention rate for female students than for male students.

## VII. QUALITY OF DATA

The data on household consumption expenditure obtained from the HIES can be characterized as generally good and reliable. However, it differs from private consumption expenditure as generally calculated in the System of National Accounts (SNA). Household consumption expenditure as estimated from different rounds of the HIES and private consumption expenditure in the NA are presented in Table 14.

**TABLE 14**  
**HOUSEHOLD AND PRIVATE CONSUMPTION EXPENDITURE**

YEAR	HES (MILLION TAKA)	SNA (MILLION TAKA)	HES/HA (PERCENT)
1991-92	662826	728632	91
1995-96	1068870	1342157	79.6
2000	1325557	1979929	66.9

As can be seen from the table, household consumption expenditure from HES was Tk 662,826 million in 1991-1992 as against Tk 728,632 million of private consumption expenditure in the SNA of the same year. The HIES estimate constitutes 91 percent of the NA estimate. In the succeeding year, 1995-1996, the estimated household consumption expenditure of Tk 1,068,870 million in the HIES was 79.6 percent of the Tk 1,342,157 million of private consumption expenditure in the national accounts. In 2000, the HIES estimate was 66.9 percent of the NA estimate. The discrepancy has narrowed over the years.

It should be noted that in the national accounts, private consumption expenditure consists of the value of final consumption expenditure on goods and services of households and final consumption expenditure of private nonprofit institutions serving households. Further, national accounts estimates cover all types of households, not just residential dwellings but including institutions such as dormitories, rooming houses, prisons, hospitals, etc. In comparison, the household consumption expenditure recorded in the HIES covers only households in their residential dwellings.

The foregoing explains the existence of the discrepancy. But what explains the steady narrowing of the discrepancy? Facts are scarce but one explanation is that the improvement in the coverage of the national accounts after SNA 1993 resulted in the increase of the number of nonprofit institutions serving households covered and in the consequent expansion of private consumption expenditure. Since then, the number of nonprofit institutions serving households has steadily declined and the corresponding private consumption expenditure has gradually fallen.

## VIII. CONCLUSION

The data collected from HIES Rounds from 1985-1986 to 2000 suggest that both income and expenditure in Bangladesh increased for the population as a whole, whether in the rural or in the urban areas. However, the distribution of income deteriorated, with the gap between lower-income and higher-income groups widening in the last decade and a half. The same can be said of expenditure, whose distribution also worsened during the period.

Bangladesh has used all commonly known methodologies for the measurement of poverty. In early years Bangladesh used mainly the direct calorie intake method of poverty line estimation, and a little later the food energy intake method. Since the mid-1990s it has switched to the cost of basic needs method. Strictly speaking, the setting up of an official poverty line requires the conduct of studies to establish the relationships of energy intake (expressed in kilo calories) with height-weight, age, working status, etc., of the population. Such relationships will permit the establishment of the threshold calorie norm for the population as a whole. However, this sort of data is not available in Bangladesh. At present Bangladesh uses the norm of 2122 kcal for individuals recommended by the Food and Agriculture Organisation for the estimation of the poverty line.

The poverty lines, based on the estimated cost of the 2122 kcal of food for individuals and an element of nonfood requirements was arrived at through the CBN method. Following the CBN method, the head count ratio showing the percentage of people whose consumption expenditure fell below the poverty line was 49.8 percent (using upper poverty line) in 2000. This was an improvement, though a modest one, over the 51.0 percent of 1995-1996. For the rural areas, the ratio was 53.1 percent in 2000, an improvement over the 55.3 percent of 1995-1996. For the urban areas, however, the trend was a deterioration, 36.6 percent in 2000 as against 29.5 percent in 1995-1996.



Nationwide, for the population in poverty, the poverty gap, or the shortfall of actual consumption expenditure from the consumption expenditure as defined by the poverty line, was 12.9 percent in 2000, an improvement over the 13.3 percent of 1995-1996. The trend was the same in the rural areas but was the reverse in the urban areas. In the rural areas, the poverty gap was 13.8 percent in 2000, compared to 14.6 percent in 1995-1996. In the urban areas, the gap was 9.5 percent in 2000, a marked deterioration over the 7.2 percent of 1995-96.

The squared poverty gap, an indicator of the severity of poverty, also declined from 1995-1996 to 2000, suggesting an improvement in the welfare of the poor in the country.

As regards other poverty related indicators, the situation is improving over time. The infant mortality rate for both sexes fell over the period 1990-2001. The net school enrolment rate for both sexes increased, though fell slightly for children aged 11-15 years in the period 1995-2000.

From the data it can be concluded that poverty is being alleviated in Bangladesh, although slowly. The infant mortality rate and the school enrolment rate, nonincome poverty indicators, are moving in the desired direction, downward and upward, respectively. One can only hope that the trend can be accelerated in the future so that the blight of poverty is substantially diminished if not totally banished in Bangladesh sooner rather than later.

## APPENDIX A COST OF BASIC NEEDS METHOD

The Household Income and Expenditure Survey (HIES) 2000 uses two methods for estimating poverty: the direct caloric intake (DCI) method and the cost of basic needs (CBN) method. Under the DCI method, a household with a per capita caloric intake of less than 1805 kcal per day is considered as “hard core poor” while a household with less than 2122 kcal per day is considered as “absolute poor.” Under the CBN method, to be considered as poor, a household must have a per capita expenditure below a given poverty line. This appendix focuses on the steps followed for estimating the poverty lines used in the CBN method. It also discusses various measures for estimating the number of the poor or the intensity of their poverty (head count ratio, poverty gap, and squared poverty gap measures).

### A. The Cost of Basic Needs Method

With the CBN method, poverty lines represent the level of per capita expenditure at which the members of households can be expected to meet their basic needs (food consumption to meet their caloric requirement and nonfood consumption). Making comparisons of poverty rates over time requires that the basic-needs bundles used to estimate poverty lines in different years are of constant value in real terms. In order to ensure this, CBN poverty lines were first estimated for a base year, chosen to be 1991-1992, and then updated to 1995-1996 and 2000 for changes in the cost-of-living using a price index. As prices of some goods and services may vary between geographical areas in Bangladesh, poverty lines were estimated at a desegregated level. Specifically, the country was divided into 14 different geographic areas (nine urban and five rural).<sup>1</sup> The method followed for estimating the 1991-1992 regional CBN poverty lines and the price indices are described below.

#### 1. Estimating the Base Year Poverty Lines

Three steps were followed for estimating what it costs a household to meet its basic needs in the base year. First, the cost of a fixed food bundle was estimated. The bundle consists of 11 items: rice, wheat, pulses, milk, oil, meat, fresh water fish, potato, other vegetables, sugar, and fruits. It provides minimal nutritional requirements corresponding to 2122 kcal per day per person, the same threshold used to identify the absolute poor under the direct calorie intake method. Prices for each item in the bundle were estimated for each of the 14 geographic areas. In order to capture the price paid by the poor for each food item, regressions were used to control for the impact of household characteristic such as total consumption, education, and occupation on the quality of the food consumed (better-off households buy more expensive food than the poor). Denoting the required quantities in the food bundle to meet the calorie requirement by  $(F_1, \dots, F_N)$ , where  $F_j$  is the required per capita quantity of food item  $j$ , food poverty lines were computed as  $Z_{kf} = \sum_{j=1}^N P_{jk} F_j$ . In this equation, the nutritional needs are the same for all areas, but the prices for each item are area-specific, with the subscript  $k$  referring to area  $k$ .

The second step involved computing two nonfood allowances for nonfood consumption. The first was obtained by taking the amount spent on nonfood items by those households whose total consumption was equal to their food poverty line  $Z_{kf}$ . These households spend less on food than the food poverty line. Hence what they spend on nonfood items must be devoted to bare essentials. Algebraically, denoting total per capita consumption by  $y$  and food per capita consumption by  $x$ , the “lower” allowances for non-food consumption were estimated as  $ZL_{kn} = E[y_i - x_i | y_i = Z_{kf}]$  where  $E$  is the expectation statistical symbol. Second, “upper” allowances for nonfood consumption were estimated by taking the amount spent on nonfood items by those households whose food expenditure was equal to the food poverty line (these households do meet their food requirement). These upper allowances for nonfood items can be expressed as  $ZU_{kn} = E[y_i - x_i | x_i = Z_{kf}]$ . Because the share of food expenditure in total consumption decreases as consumption increases,  $ZU_{kn}$  is larger than  $ZL_{kn}$ .

The third step in the estimation of the poverty lines consisted of simply adding to the food poverty lines the lower and upper nonfood allowances to yield the total lower and upper poverty lines for each of the 14 geographical areas.

$$\text{Lower poverty line: } ZL_k = Z_{kf} + ZL_{kn} \text{ where } ZL_{kn} = E[y_i - x_i \mid Iy_i = Z_{kf}]$$

$$\text{Upper poverty line: } ZU_k = Z_{kf} + ZU_{kn}, \text{ where } ZU_{kn} = E[y_i - x_i \mid Ix_i = Z_{kf}]$$

Thus, within each area, the estimates of the cost of basic food needs in the lower and upper poverty lines are the same. The difference between the two lines is due to the difference in the allowances for nonfood consumption. The lower poverty line incorporates a minimal allowance for nonfood goods (the typical nonfood spending of those who could just afford the food requirement) while the upper poverty line makes a more generous allowance (the typical nonfood spending of those who just attained the food requirement).

## 2. Updating Poverty Lines for Changes in Cost of Living

Price indices for updating the 1991-1992 CBN poverty lines to 1995-1996 and 2000 were derived by combining price information available in the HIES data sets and the nonfood CPI. The HIES data provide price information on food items and fuels that account for approximately two thirds of total household expenditure. Inflation of nonfoods that cannot be calculated from the HIES surveys was estimated by the nonfood component of the CPI.

The HIES-based price indices were derived in four steps. First, expenditure on various items in the HIES were divided into 14 groups. These groups were chosen so as to retain as much desegregation as possible (to minimize heterogeneity within categories) as well as to be comparable across the three survey years. Second, unit values (arrived at by dividing expenditures by quantity) of the most commonly consumed item within each of the expenditure groups were calculated for each household. For each group, the median of the unit values within each geographic region was calculated. Using the price of the most commonly consumed item within each group and medians (which are more robust to outliers as compared to means) for the summary region-specific unit values helped minimize the problem that the calculated unit values are contaminated by choice of quality rather than providing information on market price alone. Third, average budget shares of the 14 main expenditure groups were calculated for each survey year. Finally, region-specific Tornqvist price indexes were then calculated using budget shares of the expenditure groups along with median prices of the selected items. The Tornqvist price indices for each region  $k$  were calculated as follows:

$$\ln P_{10}^{TK} = \sum_{j=1}^n \frac{W_{1j}^k + W_{0j}^k}{2} \ln \left[ \frac{P_{1j}^k}{P_{0j}^k} \right]$$

where  $P^{TK}$  denotes the Tornqvist price index for region  $k$ , 1 and 0 denote the two years of comparison,  $W_{1j}^k$  and  $W_{0j}^k$  are the respective budget shares, and  $P_{1j}^k$  and  $P_{0j}^k$  are the respective prices for good  $j$  in the two years of comparison.

Once the HIES-based price indexes for each region had been derived from the survey data, a weighted average of these and the nonfood CPI (desegregated by urban and rural sectors) was taken to derive region-specific cost-of-living indices for 1995-1996 and 2000, the relative weights being the budget shares of covered goods in each region for the HES price index, and the balance (i.e., the number one minus these budget shares) for the nonfood consumer price index. The composite price indices were then used to update the 1991-1992 CBN poverty lines to 1995-1996 and 2000.

## **B. Alternative Poverty Measures**

Once the poverty lines have been estimated, several poverty measures can be used to measure the extent of deprivation. These are the so-called Foster-Greer-Thorbecke measures, which include (i) the head count index, which is simply the percentage of the population living in households with a per capita consumption below the poverty line; (ii) the poverty gap index, which measures the average distance separating the poor from the poverty line as a proportion of the line (with a zero distance allocated to the households who are not poor); (iii) and the squared poverty gap index, a measure of the severity of poverty, which takes into account not only the distance separating the poor from the poverty line but also the extent of inequality among the poor.

## APPENDIX B PRICE INDICES AND OTHER INDICATORS

APPENDIX TABLE B.1  
CONSUMER PRICE INDEX, NATIONAL (BASE: 1985-1986=100)

Period	General	Food, Beverage, and Tobacco	Non- food	CPI Basket						
				Clothing and Footwear	Gross Rent, Fuel, and Lighting	Furniture Furnishing Household Equipment and Operation	Medical Care and Health Expenses	Transport and Communi- cation	Recreation, Enter- tainment, Education, and Cultural Service	Miscellaneous Goods and Services
Weight	100.00	64.47	35.53	5.90	14.98	2.61	1.39	3.32	3.04	4.29
1995-96	190.27	189.13	191.86	150.68	198.10	165.64	242.56	216.14	231.17	180.22
1996-97	195.07	191.85	200.99	157.70	208.61	176.02	245.31	222.58	244.63	187.68
1997-98	208.70	205.55	214.46	164.90	221.75	193.26	256.99	235.62	261.10	207.36
1998-99	227.29	229.72	223.10	171.46	231.01	199.64	274.36	238.93	279.66	214.10
1999-2K	235.13	239.13	228.95	178.63	235.88	204.71	289.67	256.51	288.22	220.91

APPENDIX TABLE B.2  
CONSUMER PRICE INDEX, ALL URBAN (BASE: 1985-1986=100)

Period	General	Food, Beverage and Tobacco	Non- food	CPI Basket						
				Clothing and Footwear	Gross Rent, Fuel, and Lighting	Furniture Furnishing Household Equipment and Operation	Medical Care and Health Expenses	Transport and Communi- cation	Recreation, Enter- tainment, Education, and Cultural Service	Miscellaneous Good and Service
Weight	100.00	57.27	42.73	5.90	18.07	3.33	1.36	6.38	4.78	2.91
1995-96	185.96	188.22	182.93	148.43	190.03	168.82	251.41	185.89	186.89	179.90
1996-97	191.27	191.36	191.17	155.94	195.96	179.26	273.29	179.68	199.03	187.77
1997-98	204.41	206.57	201.52	165.55	202.88	189.72	302.08	212.83	205.82	200.63
1998-99	222.59	233.22	208.33	173.37	210.11	197.32	329.59	214.19	210.58	207.73
1999-2K	229.88	242.65	212.77	179.31	212.74	202.15	342.10	221.21	212.85	213.86

**APPENDIX TABLE B.3**  
**CONSUMER PRICE INDEX, ALL RURAL (BASE: 1985-1986=100)**

Period	General	Food, Beverage and Tobacco	Non- food	CPI Basket						
				Clothing and Footwear	Gross Rent, Fuel, and Lighting	Furniture Furnishing Household Equipment and Operation	Medical Care and Health Expenses	Transport and Communi- cation	Recreation, Enter- tainment, Education, and Cultural Service	Miscellaneous Good and Service
Weight	100.00	66.90	33.10	5.90	13.93	2.37	1.40	2.29	2.45	4.76
1995-96	191.50	189.60	195.34	152.22	203.22	166.23	242.62	228.82	248.64	182.82
1996-97	196.35	192.31	204.44	159.77	214.73	176.34	238.52	233.26	263.85	189.51
1997-98	210.15	205.84	218.87	165.96	229.82	196.06	244.17	244.83	281.94	211.33
1998-99	228.28	229.26	228.10	172.04	239.81	201.96	257.85	249.13	305.22	217.87
1999-2K	236.76	237.94	234.46	178.37	243.69	205.55	271.96	268.31	313.67	223.27

**APPENDIX TABLE B.4**  
**GROSS DOMESTIC PRODUCT BY DEFLATOR, 1995-1996 TO 2000-01 (P)**

Industrial Origin Sector	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01(p)
GDP Deflator	100.00	103.09	108.53	113.58	115.69	118.76

**APPENDIX TABLE B.5**  
**IMPLICIT AND SECTORAL DEFLATORS (BASE: 1995-1996)**

Industrial Origin Sector	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
GDP at constant market price (Deflators)	78.24	83.40	85.88	86.12	89.37	95.94	100.0	103.09	108.53	113.58

## APPENDIX C POVERTY PROFILE FROM POVERTY MONITORING SURVEY 1999

**APPENDIX TABLE C.1**  
**INCIDENCE OF POVERTY BY NUMBER OF MEMBERS (AS OF MAY 1999)**

NUMBER OF MEMBERS	POVERTY INCIDENCE (percent below poverty line)		
	NATIONAL	RURAL	URBAN
1	23.0	23.8	16.4
2	20.5	20.9	18.0
3	34.8	35.9	32.5
4	41.8	42.1	40.4
5	46.6	47.4	41.1
6	49.3	49.6	47.6
7	50.0	49.8	51.8
8	49.4	48.8	54.6
9	48.2	47.3	55.9
10+	41.6	41.4	42.5

**APPENDIX TABLE C.2**  
**POVERTY INCIDENCE BY LAND OWNERSHIP**

LAND OWNERSHIP	POVERTY INCIDENCE (percent below poverty line)		
	NATIONAL	RURAL	URBAN
Landless	60.0	66.6	50.1
Small	48.7	49.6	43.5
Medium	25.9	26.3	36.0
Large	17.6	17.5	16.1

Note: Small = < 1.99 acres, medium 2.00-4.99 acres, large > 5.00 acres.

**APPENDIX TABLE C.3**  
**INCIDENCE OF POVERTY BY OCCUPATION OF HOUSEHOLD HEAD**

MAIN OCCUPATION	INCIDENCE OF POVERTY (PERCENT BELOW POVERTY LINE)		
	NATIONAL	RURAL	URBAN
Agricultural			
Owner-farmer	28.7	28.2	49.8
Owner-cum-tenant farmer	41.3	40.4	71.8
Tenant Farmer	50.5	49.9	71.6
Labor (landowning)	61.5	61.4	68.5
Labor (landless)	71.1	70.8	85.3
Fishery	58.5	56.6	82.1
Livestock	71.3	74.0	60.1
Poultry	22.9	21.3	57.6
Other (agricultural)	44.4	43.3	56.5
Nonagricultural			
Officer (executive/ administrative)	5.1	9.0	7.9
Office Staff	30.2	32.0	26.9
Teaching	17.5	17.6	17.1
Business	36.3	38.4	30.4
Production Labor	60.8	60.9	60.7
Garment Worker	58.4	55.0	60.0
Construction Labor	54.3	51.9	62.2
Transport Labor	45.6	41.5	53.5
Other Labor	67.2	63.5	78.4
Driver (rickshaw/van push cart)	63.6	60.7	75.3
Blacksmith/goldsmith	36.4	32.8	52.6
Pottery	65.3	59.6	1.00
Wearing	48.6	45.9	73.8
Carpentry	49.0	47.9	59.7
Professionals (lawyer/doctors/engineer)	9.5	7.9	12.2
Tailoring, laundry, barber	48.2	46.7	57.5
Others	45.2	45.3	44.7



**APPENDIX TABLE C.4**  
**POVERTY INCIDENCE BY LEVEL OF EDUCATION**

EDUCATION LEVEL OF HOUSEHOLD HEAD	INCIDENCE OF POVERTY (percent below poverty line)		
	NATIONAL	RURAL	URBAN
Illiterate	56.8	56.0	69.1
Class I-V	43.1	41.8	54.4
Class VI-IX	32.5	31.3	38.1
SSC/HSC or equivalent	18.0	17.1	20.5
Technical educational	15.9	25.4	9.2
Graduate/postgraduate (general)	5.9	5.3	6.6
Graduate/postgraduate (technical)	7.5	14.2	2.2
Total	44.7	44.9	43.3

**APPENDIX TABLE C.5**  
**INCIDENCE OF POVERTY IN WOMEN-HEADED HOUSEHOLDS**

MEASURE	POVERTY INCIDENCE		
	NATIONAL	RURAL	URBAN
<b>By Level of Education</b>			
Illiterate	56.2	54.6	66.0
Class I-V	36.3	36.9	31.2
Class VI-IX	23.8	22.1	27.7
SSC/HSC or equivalent	13.6	24.1	4.4
Graduate/Post Graduate (General)	4.3	-	7.6
Total	45.5	46.1	42.8
<b>By Main Sources of Income</b>			
Wage and Salary	26.3	23.3	35.1
Agriculture (self employment)	35.7	34.2	75.2
Nonagriculture (self employment)	32.4	28.9	44.2
Agriculture Daily Wage	65.4	65.3	72.0
Nonagriculture Daily Wage	62.6	59.3	78.5
Pension	20.1	19.6	21.5
House Rent and Other Rents	26.8	32.7	23.0
Donation Grants, Charity, and Others	57.1	59.8	35.7

## SELECTED REFERENCES

- Ahmed, M., P. English, and S. Feldman, 1990. *Rural Poverty in Bangladesh, A Report to the Like-Minded Group*. South Asia Books.
- BBS, 1997. *Summary Report of the Household Expenditure Survey (HES) 1995-96*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 1998. *Report of Household Expenditure Survey 1995-96*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2000. *Statistical Pocketbook of Bangladesh 1999*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2001a. *National Accounts Statistics Gross Domestic Product 2000-2001*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2001b. *Preliminary Report of Household Income and Expenditure Survey (HIES) 2000*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2001c. *Report of Health and Demographic Survey 2000*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2002a. *Poverty Monitoring Survey 2002*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2002b. *Report of the Poverty Monitoring Survey 2002*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2003a. *Report of the Household Income and Expenditure Survey 2000*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- , 2003b. *Report of the Sample Vital Registration System 1999-2001*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- Bangladesh Economic Relations Division, 2003. Bangladesh: A National Strategy for Economic Growth, Poverty Reduction and Social Development. Poverty Reduction Strategy Papers, Ministry of Finance, Government of the People's Republic of Bangladesh.
- CIRDAP, 2000. *Report on CIRDAP-BBS Regional Seminar on Poverty Monitoring*.
- Foster, J., J. Greer, and E. Thorbecke, 1984. "A Class of Decomposable Poverty Measures." *Econometrica* 52:761-66.
- Rahman, M., 1994. *Poverty Issues in Rural Bangladesh*. Dhaka: University Press.
- Rahman, H. Z., and M. Hossain, 1995. *Rethinking Rural Poverty: Bangladesh as a Case Study*. Dhaka: University Press.
- Ravallion, M., and B. Sen, 1994. "Impacts on Rural Poverty of Land-Based Targeting: Further Results for Bangladesh." *World Development* 22(6):823-38.
- World Bank, 1998. *World Development Report 1998/99*. Oxford and New York: Oxford University Press.

# PUBLICATIONS FROM THE ECONOMICS AND RESEARCH DEPARTMENT

## ERD WORKING PAPER SERIES (WPS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- |   |   |
|---|---|
| <p>No. 1 Capitalizing on Globalization<br/>—<i>Barry Eichengreen, January 2002</i></p> <p>No. 2 Policy-based Lending and Poverty Reduction: An Overview of Processes, Assessment and Options<br/>—<i>Richard Bolt and Manabu Fujimura, January 2002</i></p> <p>No. 3 The Automotive Supply Chain: Global Trends and Asian Perspectives<br/>—<i>Francisco Veloso and Rajiv Kumar, January 2002</i></p> <p>No. 4 International Competitiveness of Asian Firms: An Analytical Framework<br/>—<i>Rajiv Kumar and Doren Chadde, February 2002</i></p> <p>No. 5 The International Competitiveness of Asian Economies in the Apparel Commodity Chain<br/>—<i>Gary Gereffi, February 2002</i></p> <p>No. 6 Monetary and Financial Cooperation in East Asia—The Chiang Mai Initiative and Beyond<br/>—<i>Pradumna B. Rana, February 2002</i></p> <p>No. 7 Probing Beneath Cross-national Averages: Poverty, Inequality, and Growth in the Philippines<br/>—<i>Arsenio M. Balisacan and Ernesto M. Pernia, March 2002</i></p> <p>No. 8 Poverty, Growth, and Inequality in Thailand<br/>—<i>Anil B. Deolalikar, April 2002</i></p> <p>No. 9 Microfinance in Northeast Thailand: Who Benefits and How Much?<br/>—<i>Brett E. Coleman, April 2002</i></p> <p>No. 10 Poverty Reduction and the Role of Institutions in Developing Asia<br/>—<i>Anil B. Deolalikar, Alex B. Brillantes, Jr., Raghav Gaiha, Ernesto M. Pernia, Mary Racelis with the assistance of Marita Concepcion Castro-Guevara, Liza L. Lim, Pilipinas F. Quising, May 2002</i></p> <p>No. 11 The European Social Model: Lessons for Developing Countries<br/>—<i>Assar Lindbeck, May 2002</i></p> <p>No. 12 Costs and Benefits of a Common Currency for ASEAN<br/>—<i>Srinivasa Madhur, May 2002</i></p> <p>No. 13 Monetary Cooperation in East Asia: A Survey<br/>—<i>Raul Fabella, May 2002</i></p> <p>No. 14 Toward A Political Economy Approach to Policy-based Lending<br/>—<i>George Abonyi, May 2002</i></p> <p>No. 15 A Framework for Establishing Priorities in a Country Poverty Reduction Strategy<br/>—<i>Ron Duncan and Steve Pollard, June 2002</i></p> | <p>No. 16 The Role of Infrastructure in Land-use Dynamics and Rice Production in Viet Nam's Mekong River Delta<br/>—<i>Christopher Edmonds, July 2002</i></p> <p>No. 17 Effect of Decentralization Strategy on Macroeconomic Stability in Thailand<br/>—<i>Kanokpan Lao-Araya, August 2002</i></p> <p>No. 18 Poverty and Patterns of Growth<br/>—<i>Rana Hasan and M. G. Quibria, August 2002</i></p> <p>No. 19 Why are Some Countries Richer than Others? A Reassessment of Mankiw-Romer-Weil's Test of the Neoclassical Growth Model<br/>—<i>Jesus Felipe and John McCombie, August 2002</i></p> <p>No. 20 Modernization and Son Preference in People's Republic of China<br/>—<i>Robin Burgess and Juzhong Zhuang, September 2002</i></p> <p>No. 21 The Doha Agenda and Development: A View from the Uruguay Round<br/>—<i>J. Michael Finger, September 2002</i></p> <p>No. 22 Conceptual Issues in the Role of Education Decentralization in Promoting Effective Schooling in Asian Developing Countries<br/>—<i>Jere R. Behrman, Anil B. Deolalikar, and Lee-Ying Son, September 2002</i></p> <p>No. 23 Promoting Effective Schooling through Education Decentralization in Bangladesh, Indonesia, and Philippines<br/>—<i>Jere R. Behrman, Anil B. Deolalikar, and Lee-Ying Son, September 2002</i></p> <p>No. 24 Financial Opening under the WTO Agreement in Selected Asian Countries: Progress and Issues<br/>—<i>Yun-Hwan Kim, September 2002</i></p> <p>No. 25 Revisiting Growth and Poverty Reduction in Indonesia: What Do Subnational Data Show?<br/>—<i>Arsenio M. Balisacan, Ernesto M. Pernia, and Abuzar Asra, October 2002</i></p> <p>No. 26 Causes of the 1997 Asian Financial Crisis: What Can an Early Warning System Model Tell Us?<br/>—<i>Juzhong Zhuang and J. Malcolm Dowling, October 2002</i></p> <p>No. 27 Digital Divide: Determinants and Policies with Special Reference to Asia<br/>—<i>M. G. Quibria, Shamsun N. Ahmed, Ted Tschang, and Mari-Len Reyes-Macasaquit, October 2002</i></p> <p>No. 28 Regional Cooperation in Asia: Long-term Progress, Recent Retrogression, and the Way Forward<br/>—<i>Ramgopal Agarwala and Brahm Prakash, October 2002</i></p> |
|---|---|

- No. 29 How can Cambodia, Lao PDR, Myanmar, and Viet Nam Cope with Revenue Lost Due to AFTA Tariff Reductions?  
—*Kanokpan Lao-Araya*  
November 2002
- No. 30 Asian Regionalism and Its Effects on Trade in the 1980s and 1990s  
—*Ramon Clarete, Christopher Edmonds, and Jessica Seddon Wallack*  
November 2002
- No. 31 New Economy and the Effects of Industrial Structures on International Equity Market Correlations  
—*Cyn-Young Park and Jaejoon Woo*  
December 2002
- No. 32 Leading Indicators of Business Cycles in Malaysia and the Philippines  
—*Wenda Zhang and Juzhong Zhuang*  
December 2002
- No. 33 Technological Spillovers from Foreign Direct Investment—A Survey  
—*Emma Xiaoqin Fan*  
December 2002
- No. 34 Economic Openness and Regional Development in the Philippines  
—*Ernesto M. Pernia and Pilipinas F. Quising*  
January 2003
- No. 35 Bond Market Development in East Asia: Issues and Challenges  
—*Raul Fabella and Srinivasa Madhur*  
January 2003
- No. 36 Environment Statistics in Central Asia: Progress and Prospects  
—*Robert Ballance and Bishnu D. Pant*  
March 2003
- No. 37 Electricity Demand in the People's Republic of China: Investment Requirement and Environmental Impact  
—*Bo Q. Lin*  
March 2003
- No. 38 Foreign Direct Investment in Developing Asia: Trends, Effects, and Likely Issues for the Forthcoming WTO Negotiations  
—*Douglas H. Brooks, Emma Xiaoqin Fan, and Lea R. Sumulong*  
April 2003
- No. 39 The Political Economy of Good Governance for Poverty Alleviation Policies  
—*Narayan Lakshman*  
April 2003
- No. 40 The Puzzle of Social Capital  
A Critical Review  
—*M. G. Quibria*  
May 2003
- No. 41 Industrial Structure, Technical Change, and the Role of Government in Development of the Electronics and Information Industry in Taipei, China  
—*Yeo Lin*  
May 2003
- No. 42 Economic Growth and Poverty Reduction in Viet Nam  
—*Arsenio M. Balisacan, Ernesto M. Pernia, and Gemma Esther B. Estrada*  
June 2003
- No. 43 Why Has Income Inequality in Thailand Increased? An Analysis Using 1975-1998 Surveys  
—*Taizo Motonishi*  
June 2003
- No. 44 Welfare Impacts of Electricity Generation Sector Reform in the Philippines  
—*Natsuko Toba*  
June 2003
- No. 45 A Review of Commitment Savings Products in Developing Countries  
—*Nava Ashraf, Nathalie Gons, Dean S. Karlan, and Wesley Yin*  
July 2003
- No. 46 Local Government Finance, Private Resources, and Local Credit Markets in Asia  
—*Roberto de Vera and Yun-Hwan Kim*  
October 2003  
July 2003
- No. 47 Excess Investment and Efficiency Loss During Reforms: The Case of Provincial-level Fixed-Asset Investment in People's Republic of China  
—*Duo Qin and Haiyan Song*  
October 2003
- No. 48 Is Export-led Growth Passe? Implications for Developing Asia  
—*Jesus Felipe*  
December 2003
- No. 49 Changing Bank Lending Behavior and Corporate Financing in Asia—Some Research Issues  
—*Emma Xiaoqin Fan and Akiko Terada-Hagiwara*  
December 2003
- No. 50 Is People's Republic of China's Rising Services Sector Leading to Cost Disease?  
—*Duo Qin*  
March 2004
- No. 51 Poverty Estimates in India: Some Key Issues  
—*Savita Sharma*  
May 2004
- No. 52 Restructuring and Regulatory Reform in the Power Sector: Review of Experience and Issues  
—*Peter Choynowski*  
May 2004
- No. 53 Competitiveness, Income Distribution, and Growth in the Philippines: What Does the Long-run Evidence Show?  
—*Jesus Felipe and Grace C. Sipin*  
June 2004
- No. 54 Practices of Poverty Measurement and Poverty Profile of Bangladesh  
—*Faizuddin Ahmed*  
August 2004

## ERD TECHNICAL NOTE SERIES (TNS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- |       |   |   |
|-------|---|---|
| No. 1 | Contingency Calculations for Environmental Impacts with Unknown Monetary Values<br>—David Dole<br>February 2002   | —Erik Bloom and Peter Choynowski<br>May 2003  |
| No. 2 | Integrating Risk into ADB's Economic Analysis of Projects<br>—Nigel Rayner, Anneli Lagman-Martin, and Keith Ward<br>June 2002                             | No. 7 Strengthening the Economic Analysis of Natural Resource Management Projects<br>—Keith Ward<br>September 2003  |
| No. 3 | Measuring Willingness to Pay for Electricity<br>—Peter Choynowski<br>July 2002  | No. 8 Testing Savings Product Innovations Using an Experimental Methodology<br>—Nava Ashraf, Dean S. Karlan, and Wesley Yin<br>November 2003                  |
| No. 4 | Economic Issues in the Design and Analysis of a Wastewater Treatment Project<br>—David Dole<br>July 2002  | No. 9 Setting User Charges for Public Services: Policies and Practice at the Asian Development Bank<br>—David Dole<br>December 2003                           |
| No. 5 | An Analysis and Case Study of the Role of Environmental Economics at the Asian Development Bank<br>—David Dole and Piya Abeygunawardena<br>September 2002 | No. 10 Beyond Cost Recovery: Setting User Charges for Financial, Economic, and Social Goals<br>—David Dole and Ian Bartlett<br>January 2004                   |
| No. 6 | Economic Analysis of Health Projects: A Case Study in Cambodia  | No. 11 Shadow Exchange Rates for Project Economic Analysis: Toward Improving Practice at the Asian Development Bank<br>—Anneli Lagman-Martin<br>February 2004 |

## ERD POLICY BRIEF SERIES (PBS)

(Published in-house; Available through ADB Office of External Relations; Free of charge)

- |        |  |  |
|--------|--|--|
| No. 1  | Is Growth Good Enough for the Poor?<br>—Ernesto M. Pernia, October 2001  | Philippines<br>—E. M. Pernia and P. F. Quising<br>October 2002   |
| No. 2  | India's Economic Reforms<br>What Has Been Accomplished?<br>What Remains to Be Done?<br>—Arvind Panagariya, November 2001                                       | No. 11 Implications of a US Dollar Depreciation for Asian Developing Countries<br>—Emma Fan<br>July 2002     |
| No. 3  | Unequal Benefits of Growth in Viet Nam<br>—Indu Bhushan, Erik Bloom, and Nguyen Minh Thang, January 2002   | No. 12 Dangers of Deflation<br>—D. Brooks and P. F. Quising<br>December 2002                                 |
| No. 4  | Is Volatility Built into Today's World Economy?<br>—J. Malcolm Dowling and J.P. Verbiest, February 2002  | No. 13 Infrastructure and Poverty Reduction—What is the Connection?<br>—I. Ali and E. Pernia<br>January 2003 |
| No. 5  | What Else Besides Growth Matters to Poverty Reduction? Philippines<br>—Arsenio M. Balisacan and Ernesto M. Pernia, February 2002                               | No. 14 Infrastructure and Poverty Reduction—Making Markets Work for the Poor<br>—Xianbin Yao<br>May 2003     |
| No. 6  | Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia<br>—Indu Bhushan, Sheryl Keller, and Brad Schwartz, March 2002 | No. 15 SARS: Economic Impacts and Implications<br>—Emma Xiaojin Fan<br>May 2003                              |
| No. 7  | Causes of the 1997 Asian Financial Crisis: What Can an Early Warning System Model Tell Us?<br>—Juzhong Zhuang and Malcolm Dowling, June 2002                   | No. 16 Emerging Tax Issues: Implications of Globalization and Technology<br>—Kanokpan Lao Araya<br>May 2003  |
| No. 8  | The Role of Preferential Trading Arrangements in Asia<br>—Christopher Edmonds and Jean-Pierre Verbiest, July 2002  | No. 17 Pro-Poor Growth: What is It and Why is It Important?<br>—Ernesto M. Pernia<br>May 2003                |
| No. 9  | The Doha Round: A Development Perspective<br>—Jean-Pierre Verbiest, Jeffrey Liang, and Lea Sumulong<br>July 2002   | No. 18 Public-Private Partnership for Competitiveness<br>—Jesus Felipe<br>June 2003                          |
| No. 10 | Is Economic Openness Good for Regional Development and Poverty Reduction? The  | No. 19 Reviving Asian Economic Growth Requires Further Reforms   |

- |        |  |        |   |
|--------|--|--------|---|
|        | — <i>Ifzal Ali</i><br><i>June 2003</i>   | No. 26 | A Note on Dual/Multiple Exchange Rates<br>— <i>Emma Xiaoqin Fan</i><br><i>May 2004</i>  |
| No. 20 | The Millennium Development Goals and Poverty:<br>Are We Counting the World's Poor Right?<br>— <i>M. G. Quibria</i><br><i>July 2003</i>                     | No. 27 | Inclusive Growth for Sustainable Poverty Reduction<br>in Developing Asia: The Enabling Role of<br>Infrastructure Development<br>— <i>Ifzal Ali and Xianbin Yao</i><br><i>May 2004</i> |
| No. 21 | Trade and Poverty: What are the Connections?<br>— <i>Douglas H. Brooks</i><br><i>July 2003</i>   | No. 28 | Higher Oil Prices: Asian Perspectives and<br>Implications for 2004-2005<br>— <i>Cyn-Young Park</i><br><i>June 2004</i>  |
| No. 22 | Adapting Education to the Global Economy<br>— <i>Olivier Dupriez</i><br><i>September 2003</i>  | No. 29 | Accelerating Agriculture and Rural Development for<br>Inclusive Growth: Policy Implications for<br>Developing Asia<br>— <i>Richard Bolt</i><br><i>July 2004</i>                       |
| No. 23 | Avian Flu: An Economic Assessment for Selected<br>Developing Countries in Asia<br>— <i>Jean-Pierre Verbiest and Charissa Castillo</i><br><i>March 2004</i> | No. 30 | Living with Higher Interest Rates: Is Asia Ready?<br>— <i>Cyn-Young Park</i><br><i>August 2004</i>  |
| No. 25 | Purchasing Power Parities and the International<br>Comparison Program in a Globalized World<br>— <i>Bishnu Pant</i><br><i>March 2004</i>                   |        |   |

## SERIALS

(Co-published with Oxford University Press; Available commercially through Oxford University Press Offices, Associated Companies, and Agents)

1. Asian Development Outlook (ADO; annual)  
\$36.00 (*paperback*)
2. Key Indicators of Developing Asian and Pacific Countries (KI; annual)  
\$35.00 (*paperback*)

## JOURNAL

(Published in-house; Available commercially through ADB Office of External Relations)

1. Asian Development Review (ADR; semiannual)  
\$5.00 *per issue*; \$8.00 *per year (2 issues)*

## MONOGRAPH SERIES

(Published in-house; Available through ADB Office of External Relations; Free of charge)

## EDRC REPORT SERIES (ER)

- |        |   |        |  |
|--------|---|--------|--|
| No. 1  | ASEAN and the Asian Development Bank<br>— <i>Seiji Naya, April 1982</i>   | No. 22 | Effects of External Shocks on the Balance of Payments, Policy Responses, and Debt Problems of Asian Developing Countries<br>— <i>Seiji Naya, December 1983</i>                   |
| No. 2  | Development Issues for the Developing East and Southeast Asian Countries and International Cooperation<br>— <i>Seiji Naya and Graham Abbott, April 1982</i>       | No. 23 | Changing Trade Patterns and Policy Issues: The Prospects for East and Southeast Asian Developing Countries<br>— <i>Seiji Naya and Ulrich Hiemenz, February 1984</i>              |
| No. 3  | Aid, Savings, and Growth in the Asian Region<br>— <i>J. Malcolm Dowling and Ulrich Hiemenz, April 1982</i>  | No. 24 | Small-Scale Industries in Asian Economic Development: Problems and Prospects<br>— <i>Seiji Naya, February 1984</i>   |
| No. 4  | Development-oriented Foreign Investment and the Role of ADB<br>— <i>Kiyoshi Kojima, April 1982</i>  | No. 25 | A Study on the External Debt Indicators Applying Logit Analysis<br>— <i>Jungsoo Lee and Clarita Barretto, February 1984</i>  |
| No. 5  | The Multilateral Development Banks and the International Economy's Missing Public Sector<br>— <i>John Lewis, June 1982</i>  | No. 26 | Alternatives to Institutional Credit Programs in the Agricultural Sector of Low-Income Countries<br>— <i>Jennifer Sour, March 1984</i>   |
| No. 6  | Notes on External Debt of DMCs<br>— <i>Evelyn Go, July 1982</i>   | No. 27 | Economic Scene in Asia and Its Special Features<br>— <i>Kedar N. Kohli, November 1984</i>  |
| No. 7  | Grant Element in Bank Loans<br>— <i>Dal Hyun Kim, July 1982</i>   | No. 28 | The Effect of Terms of Trade Changes on the Balance of Payments and Real National Income of Asian Developing Countries<br>— <i>Jungsoo Lee and Lutgarda Labios, January 1985</i> |
| No. 8  | Shadow Exchange Rates and Standard Conversion Factors in Project Evaluation<br>— <i>Peter Warr, September 1982</i>  | No. 29 | Cause and Effect in the World Sugar Market: Some Empirical Findings 1951-1982<br>— <i>Yoshihiro Iwasaki, February 1985</i>   |
| No. 9  | Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues<br>— <i>Mathias Bruch and Ulrich Hiemenz, January 1983</i> | No. 30 | Sources of Balance of Payments Problem in the 1970s: The Asian Experience<br>— <i>Pradumna Rana, February 1985</i>   |
| No. 10 | A Note on the Third Ministerial Meeting of GATT<br>— <i>Jungsoo Lee, January 1983</i>   | No. 31 | India's Manufactured Exports: An Analysis of Supply Sectors<br>— <i>Ifzal Ali, February 1985</i>   |
| No. 11 | Macroeconomic Forecasts for the Republic of China, Hong Kong, and Republic of Korea<br>— <i>J.M. Dowling, January 1983</i>  | No. 32 | Meeting Basic Human Needs in Asian Developing Countries<br>— <i>Jungsoo Lee and Emma Banaria, March 1985</i>   |
| No. 12 | ASEAN: Economic Situation and Prospects<br>— <i>Seiji Naya, March 1983</i>  | No. 33 | The Impact of Foreign Capital Inflow on Investment and Economic Growth in Developing Asia<br>— <i>Evelyn Go, May 1985</i>  |
| No. 13 | The Future Prospects for the Developing Countries of Asia<br>— <i>Seiji Naya, March 1983</i>  | No. 34 | The Climate for Energy Development in the Pacific and Asian Region: Priorities and Perspectives<br>— <i>V.V. Desai, April 1986</i>   |
| No. 14 | Energy and Structural Change in the Asia-Pacific Region, Summary of the Thirteenth Pacific Trade and Development Conference<br>— <i>Seiji Naya, March 1983</i>    | No. 35 | Impact of Appreciation of the Yen on Developing Member Countries of the Bank<br>— <i>Jungsoo Lee, Pradumna Rana, and Ifzal Ali, May 1986</i>                                     |
| No. 15 | A Survey of Empirical Studies on Demand for Electricity with Special Emphasis on Price Elasticity of Demand<br>— <i>Wisarn Pupphavesa, June 1983</i>              | No. 36 | Smuggling and Domestic Economic Policies in Developing Countries<br>— <i>A.H.M.N. Chowdhury, October 1986</i>  |
| No. 16 | Determinants of Paddy Production in Indonesia: 1972-1981—A Simultaneous Equation Model Approach<br>— <i>T.K. Jayaraman, June 1983</i>                             | No. 37 | Public Investment Criteria: Economic Internal Rate of Return and Equalizing Discount Rate<br>— <i>Ifzal Ali, November 1986</i>   |
| No. 17 | The Philippine Economy: Economic Forecasts for 1983 and 1984<br>— <i>J.M. Dowling, E. Go, and C.N. Castillo, June 1983</i>  | No. 38 | Review of the Theory of Neoclassical Political Economy: An Application to Trade Policies<br>— <i>M.G. Quibria, December 1986</i>   |
| No. 18 | Economic Forecast for Indonesia<br>— <i>J.M. Dowling, H.Y. Kim, Y.K. Wang, and C.N. Castillo, June 1983</i>   | No. 39 | Factors Influencing the Choice of Location: Local and Foreign Firms in the Philippines<br>— <i>E.M. Pernia and A.N. Herrin, February 1987</i>                                    |
| No. 19 | Relative External Debt Situation of Asian Developing Countries: An Application of Ranking Method<br>— <i>Jungsoo Lee, June 1983</i>                               | No. 40 | A Demographic Perspective on Developing Asia and Its Relevance to the Bank<br>— <i>E.M. Pernia, May 1987</i>   |
| No. 20 | New Evidence on Yields, Fertilizer Application, and Prices in Asian Rice Production<br>— <i>William James and Teresita Ramirez, July 1983</i>                     | No. 41 | Emerging Issues in Asia and Social Cost Benefit Analysis<br>— <i>I. Ali, September 1988</i>  |
| No. 21 | Inflationary Effects of Exchange Rate Changes in Nine Asian LDCs<br>— <i>Pradumna B. Rana and J. Malcolm Dowling, Jr., December 1983</i>                          | No. 42 | Shifting Revealed Comparative Advantage:   |

- Experiences of Asian and Pacific Developing Countries  
—*P.B. Rana, November 1988*
- No. 43 Agricultural Price Policy in Asia: Issues and Areas of Reforms  
—*I. Ali, November 1988*
- No. 44 Service Trade and Asian Developing Economies  
—*M.G. Quibria, October 1989*
- No. 45 A Review of the Economic Analysis of Power Projects in Asia and Identification of Areas of Improvement  
—*I. Ali, November 1989*
- No. 46 Growth Perspective and Challenges for Asia: Areas for Policy Review and Research  
—*I. Ali, November 1989*
- No. 47 An Approach to Estimating the Poverty Alleviation Impact of an Agricultural Project  
—*I. Ali, January 1990*
- No. 48 Economic Growth Performance of Indonesia, the Philippines, and Thailand: The Human Resource Dimension  
—*E.M. Pernia, January 1990*
- No. 49 Foreign Exchange and Fiscal Impact of a Project: A Methodological Framework for Estimation  
—*I. Ali, February 1990*
- No. 50 Public Investment Criteria: Financial and Economic Internal Rates of Return  
—*I. Ali, April 1990*
- No. 51 Evaluation of Water Supply Projects: An Economic Framework  
—*Arlene M. Tadle, June 1990*
- No. 52 Interrelationship Between Shadow Prices, Project Investment, and Policy Reforms: An Analytical Framework  
—*I. Ali, November 1990*
- No. 53 Issues in Assessing the Impact of Project and Sector Adjustment Lending  
—*I. Ali, December 1990*
- No. 54 Some Aspects of Urbanization and the Environment in Southeast Asia  
—*Ernesto M. Pernia, January 1991*
- No. 55 Financial Sector and Economic Development: A Survey  
—*Jungsoo Lee, September 1991*
- No. 56 A Framework for Justifying Bank-Assisted Education Projects in Asia: A Review of the Socioeconomic Analysis and Identification of Areas of Improvement  
—*Etienne Van De Walle, February 1992*
- No. 57 Medium-term Growth-Stabilization Relationship in Asian Developing Countries and Some Policy Considerations  
—*Yun-Hwan Kim, February 1993*
- No. 58 Urbanization, Population Distribution, and Economic Development in Asia  
—*Ernesto M. Pernia, February 1993*
- No. 59 The Need for Fiscal Consolidation in Nepal: The Results of a Simulation  
—*Filippo di Mauro and Ronald Antonio Butiong, July 1993*
- No. 60 A Computable General Equilibrium Model of Nepal  
—*Timothy Buehrer and Filippo di Mauro, October 1993*
- No. 61 The Role of Government in Export Expansion in the Republic of Korea: A Revisit  
—*Yun-Hwan Kim, February 1994*
- No. 62 Rural Reforms, Structural Change, and Agricultural Growth in the People's Republic of China  
—*Bo Lin, August 1994*
- No. 63 Incentives and Regulation for Pollution Abatement with an Application to Waste Water Treatment  
—*Sudipto Mundle, U. Shankar, and Shekhar Mehta, October 1995*
- No. 64 Saving Transitions in Southeast Asia  
—*Frank Harrigan, February 1996*
- No. 65 Total Factor Productivity Growth in East Asia: A Critical Survey  
—*Jesus Felipe, September 1997*
- No. 66 Foreign Direct Investment in Pakistan: Policy Issues and Operational Implications  
—*Ashfaq H. Khan and Yun-Hwan Kim, July 1999*
- No. 67 Fiscal Policy, Income Distribution and Growth  
—*Sailesh K. Jha, November 1999*

## ECONOMIC STAFF PAPERS (ES)

- No. 1 International Reserves: Factors Determining Needs and Adequacy  
—*Evelyn Go, May 1981*
- No. 2 Domestic Savings in Selected Developing Asian Countries  
—*Basil Moore, assisted by A.H.M. Nuruddin Chowdhury, September 1981*
- No. 3 Changes in Consumption, Imports and Exports of Oil Since 1973: A Preliminary Survey of the Developing Member Countries of the Asian Development Bank  
—*Dal Hyun Kim and Graham Abbott, September 1981*
- No. 4 By-Passed Areas, Regional Inequalities, and Development Policies in Selected Southeast Asian Countries  
—*William James, October 1981*
- No. 5 Asian Agriculture and Economic Development  
—*William James, March 1982*
- No. 6 Inflation in Developing Member Countries: An Analysis of Recent Trends  
—*A.H.M. Nuruddin Chowdhury and J. Malcolm Dowling, March 1982*
- No. 7 Industrial Growth and Employment in Developing Asian Countries: Issues and Perspectives for the Coming Decade  
—*Ulrich Hiemenz, March 1982*
- No. 8 Petrodollar Recycling 1973-1980. Part 1: Regional Adjustments and the World Economy  
—*Burnham Campbell, April 1982*
- No. 9 Developing Asia: The Importance of Domestic Policies  
—*Economics Office Staff under the direction of Seiji Naya, May 1982*
- No. 10 Financial Development and Household Savings: Issues in Domestic Resource Mobilization in Asian Developing Countries  
—*Wan-Soon Kim, July 1982*
- No. 11 Industrial Development: Role of Specialized Financial Institutions  
—*Kedar N. Kohli, August 1982*
- No. 12 Petrodollar Recycling 1973-1980. Part II: Debt Problems and an Evaluation of Suggested Remedies  
—*Burnham Campbell, September 1982*
- No. 13 Credit Rationing, Rural Savings, and Financial Policy in Developing Countries  
—*William James, September 1982*
- No. 14 Small and Medium-Scale Manufacturing



- Establishments in ASEAN Countries: Perspectives and Policy Issues  
—*Mathias Bruch and Ulrich Hiemenz, March 1983*
- No. 15 Income Distribution and Economic Growth in Developing Asian Countries  
—*J. Malcolm Dowling and David Soo, March 1983*
- No. 16 Long-Run Debt-Servicing Capacity of Asian Developing Countries: An Application of Critical Interest Rate Approach  
—*Jungsoo Lee, June 1983*
- No. 17 External Shocks, Energy Policy, and Macroeconomic Performance of Asian Developing Countries: A Policy Analysis  
—*William James, July 1983*
- No. 18 The Impact of the Current Exchange Rate System on Trade and Inflation of Selected Developing Member Countries  
—*Pradumna Rana, September 1983*
- No. 19 Asian Agriculture in Transition: Key Policy Issues  
—*William James, September 1983*
- No. 20 The Transition to an Industrial Economy in Monsoon Asia  
—*Harry T. Oshima, October 1983*
- No. 21 The Significance of Off-Farm Employment and Incomes in Post-War East Asian Growth  
—*Harry T. Oshima, January 1984*
- No. 22 Income Distribution and Poverty in Selected Asian Countries  
—*John Malcolm Dowling, Jr., November 1984*
- No. 23 ASEAN Economies and ASEAN Economic Cooperation  
—*Narongchai Akrasanee, November 1984*
- No. 24 Economic Analysis of Power Projects  
—*Nitin Desai, January 1985*
- No. 25 Exports and Economic Growth in the Asian Region  
—*Pradumna Rana, February 1985*
- No. 26 Patterns of External Financing of DMCs  
—*E. Go, May 1985*
- No. 27 Industrial Technology Development the Republic of Korea  
—*S.Y. Lo, July 1985*
- No. 28 Risk Analysis and Project Selection: A Review of Practical Issues  
—*J.K. Johnson, August 1985*
- No. 29 Rice in Indonesia: Price Policy and Comparative Advantage  
—*I. Ali, January 1986*
- No. 30 Effects of Foreign Capital Inflows on Developing Countries of Asia  
—*Jungsoo Lee, Pradumna B. Rana, and Yoshihiro Iwasaki, April 1986*
- No. 31 Economic Analysis of the Environmental Impacts of Development Projects  
—*John A. Dixon et al., EAPI, East-West Center, August 1986*
- No. 32 Science and Technology for Development: Role of the Bank  
—*Kedar N. Kohli and Ifzal Ali, November 1986*
- No. 33 Satellite Remote Sensing in the Asian and Pacific Region  
—*Mohan Sundara Rajan, December 1986*
- No. 34 Changes in the Export Patterns of Asian and Pacific Developing Countries: An Empirical Overview  
—*Pradumna B. Rana, January 1987*
- No. 35 Agricultural Price Policy in Nepal  
—*Gerald C. Nelson, March 1987*
- No. 36 Implications of Falling Primary Commodity Prices for Agricultural Strategy in the Philippines  
—*Ifzal Ali, September 1987*
- No. 37 Determining Irrigation Charges: A Framework  
—*Prabhakar B. Ghate, October 1987*
- No. 38 The Role of Fertilizer Subsidies in Agricultural Production: A Review of Select Issues  
—*M.G. Quibria, October 1987*
- No. 39 Domestic Adjustment to External Shocks in Developing Asia  
—*Jungsoo Lee, October 1987*
- No. 40 Improving Domestic Resource Mobilization through Financial Development: Indonesia  
—*Philip Erquiaga, November 1987*
- No. 41 Recent Trends and Issues on Foreign Direct Investment in Asian and Pacific Developing Countries  
—*P.B. Rana, March 1988*
- No. 42 Manufactured Exports from the Philippines: A Sector Profile and an Agenda for Reform  
—*I. Ali, September 1988*
- No. 43 A Framework for Evaluating the Economic Benefits of Power Projects  
—*I. Ali, August 1989*
- No. 44 Promotion of Manufactured Exports in Pakistan  
—*Jungsoo Lee and Yoshihiro Iwasaki, September 1989*
- No. 45 Education and Labor Markets in Indonesia: A Sector Survey  
—*Ernesto M. Pernia and David N. Wilson, September 1989*
- No. 46 Industrial Technology Capabilities and Policies in Selected ADCs  
—*Hiroshi Kakazu, June 1990*
- No. 47 Designing Strategies and Policies for Managing Structural Change in Asia  
—*Ifzal Ali, June 1990*
- No. 48 The Completion of the Single European Community Market in 1992: A Tentative Assessment of its Impact on Asian Developing Countries  
—*J.P. Verbiest and Min Tang, June 1991*
- No. 49 Economic Analysis of Investment in Power Systems  
—*Ifzal Ali, June 1991*
- No. 50 External Finance and the Role of Multilateral Financial Institutions in South Asia: Changing Patterns, Prospects, and Challenges  
—*Jungsoo Lee, November 1991*
- No. 51 The Gender and Poverty Nexus: Issues and Policies  
—*M.G. Quibria, November 1993*
- No. 52 The Role of the State in Economic Development: Theory, the East Asian Experience, and the Malaysian Case  
—*Jason Brown, December 1993*
- No. 53 The Economic Benefits of Potable Water Supply Projects to Households in Developing Countries  
—*Dale Whittington and Venkateswarlu Swarna, January 1994*
- No. 54 Growth Triangles: Conceptual Issues and Operational Problems  
—*Min Tang and Myo Thant, February 1994*
- No. 55 The Emerging Global Trading Environment and Developing Asia  
—*Arvind Panagariya, M.G. Quibria, and Narhari Rao, July 1996*
- No. 56 Aspects of Urban Water and Sanitation in the Context of Rapid Urbanization in Developing Asia  
—*Ernesto M. Pernia and Stella LF. Alabastro, September 1997*
- No. 57 Challenges for Asia's Trade and Environment  
—*Douglas H. Brooks, January 1998*
- No. 58 Economic Analysis of Health Sector Projects: A Review of Issues, Methods, and Approaches  
—*Ramesh Adhikari, Paul Gertler, and Anneli Lagman, March 1999*
- No. 59 The Asian Crisis: An Alternate View  
—*Rajiv Kumar and Bibek Debroy, July 1999*
- No. 60 Social Consequences of the Financial Crisis in Asia  
—*James C. Knowles, Ernesto M. Pernia, and Mary Racelis, November 1999*

## OCCASIONAL PAPERS (OP)

- |   |   |
|---|---|
| <p>No. 1 Poverty in the People's Republic of China: Recent Developments and Scope for Bank Assistance<br/>—<i>K.H. Moinuddin, November 1992</i></p> <p>No. 2 The Eastern Islands of Indonesia: An Overview of Development Needs and Potential<br/>—<i>Brien K. Parkinson, January 1993</i></p> <p>No. 3 Rural Institutional Finance in Bangladesh and Nepal: Review and Agenda for Reforms<br/>—<i>A.H.M.N. Chowdhury and Marcelia C. Garcia, November 1993</i></p> <p>No. 4 Fiscal Deficits and Current Account Imbalances of the South Pacific Countries: A Case Study of Vanuatu<br/>—<i>T.K. Jayaraman, December 1993</i></p> <p>No. 5 Reforms in the Transitional Economies of Asia<br/>—<i>Pradumna B. Rana, December 1993</i></p> <p>No. 6 Environmental Challenges in the People's Republic of China and Scope for Bank Assistance<br/>—<i>Elisabetta Capannelli and Omkar L. Shrestha, December 1993</i></p> <p>No. 7 Sustainable Development Environment and Poverty Nexus<br/>—<i>K.F. Jalal, December 1993</i></p> <p>No. 8 Intermediate Services and Economic Development: The Malaysian Example<br/>—<i>Sutanu Behuria and Rahul Khullar, May 1994</i></p> <p>No. 9 Interest Rate Deregulation: A Brief Survey of the Policy Issues and the Asian Experience<br/>—<i>Carlos J. Glower, July 1994</i></p> <p>No. 10 Some Aspects of Land Administration in Indonesia: Implications for Bank Operations<br/>—<i>Sutanu Behuria, July 1994</i></p> <p>No. 11 Demographic and Socioeconomic Determinants of Contraceptive Use among Urban Women in the Melanesian Countries in the South Pacific: A Case Study of Port Vila Town in Vanuatu<br/>—<i>T.K. Jayaraman, February 1995</i></p> | <p>No. 12 Managing Development through Institution Building<br/>— <i>Hilton L. Root, October 1995</i></p> <p>No. 13 Growth, Structural Change, and Optimal Poverty Interventions<br/>—<i>Shiladitya Chatterjee, November 1995</i></p> <p>No. 14 Private Investment and Macroeconomic Environment in the South Pacific Island Countries: A Cross-Country Analysis<br/>—<i>T.K. Jayaraman, October 1996</i></p> <p>No. 15 The Rural-Urban Transition in Viet Nam: Some Selected Issues<br/>—<i>Sudipto Mundle and Brian Van Arkadie, October 1997</i></p> <p>No. 16 A New Approach to Setting the Future Transport Agenda<br/>—<i>Roger Allport, Geoff Key, and Charles Melhuish, June 1998</i></p> <p>No. 17 Adjustment and Distribution: The Indian Experience<br/>—<i>Sudipto Mundle and V.B. Tulasidhar, June 1998</i></p> <p>No. 18 Tax Reforms in Viet Nam: A Selective Analysis<br/>—<i>Sudipto Mundle, December 1998</i></p> <p>No. 19 Surges and Volatility of Private Capital Flows to Asian Developing Countries: Implications for Multilateral Development Banks<br/>—<i>Pradumna B. Rana, December 1998</i></p> <p>No. 20 The Millennium Round and the Asian Economies: An Introduction<br/>—<i>Dilip K. Das, October 1999</i></p> <p>No. 21 Occupational Segregation and the Gender Earnings Gap<br/>—<i>Joseph E. Zveglic, Jr. and Yana van der Meulen Rodgers, December 1999</i></p> <p>No. 22 Information Technology: Next Locomotive of Growth?<br/>—<i>Dilip K. Das, June 2000</i></p> |
|---|---|

## STATISTICAL REPORT SERIES (SR)

- |   |   |
|---|---|
| <p>No. 1 Estimates of the Total External Debt of the Developing Member Countries of ADB: 1981-1983<br/>—<i>I.P. David, September 1984</i></p> <p>No. 2 Multivariate Statistical and Graphical Classification Techniques Applied to the Problem of Grouping Countries<br/>—<i>I.P. David and D.S. Maligalig, March 1985</i></p> <p>No. 3 Gross National Product (GNP) Measurement Issues in South Pacific Developing Member Countries of ADB<br/>—<i>S.G. Tiwari, September 1985</i></p> <p>No. 4 Estimates of Comparable Savings in Selected DMCs<br/>—<i>Hananto Sigit, December 1985</i></p> <p>No. 5 Keeping Sample Survey Design and Analysis Simple<br/>—<i>I.P. David, December 1985</i></p> <p>No. 6 External Debt Situation in Asian Developing Countries<br/>—<i>I.P. David and Jungsoo Lee, March 1986</i></p> <p>No. 7 Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part I: Existing National Accounts of SPDMCs—Analysis of Methodology and Application of SNA Concepts<br/>—<i>P. Hodgkinson, October 1986</i></p> <p>No. 8 Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part II: Factors Affecting Inter-country Comparability of Per Capita GNP<br/>—<i>P. Hodgkinson, October 1986</i></p> <p>No. 9 Survey of the External Debt Situation</p> | <p>in Asian Developing Countries, 1985<br/>—<i>Jungsoo Lee and I.P. David, April 1987</i></p> <p>No. 10 A Survey of the External Debt Situation in Asian Developing Countries, 1986<br/>—<i>Jungsoo Lee and I.P. David, April 1988</i></p> <p>No. 11 Changing Pattern of Financial Flows to Asian and Pacific Developing Countries<br/>—<i>Jungsoo Lee and I.P. David, March 1989</i></p> <p>No. 12 The State of Agricultural Statistics in Southeast Asia<br/>—<i>I.P. David, March 1989</i></p> <p>No. 13 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1987-1988<br/>—<i>Jungsoo Lee and I.P. David, July 1989</i></p> <p>No. 14 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1988-1989<br/>—<i>Jungsoo Lee, May 1990</i></p> <p>No. 15 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1989-1992<br/>—<i>Min Tang, June 1991</i></p> <p>No. 16 Recent Trends and Prospects of External Debt Situation and Financial Flows to Asian and Pacific Developing Countries<br/>—<i>Min Tang and Aludia Pardo, June 1992</i></p> <p>No. 17 Purchasing Power Parity in Asian Developing Countries: A Co-Integration Test<br/>—<i>Min Tang and Ronald Q. Butiong, April 1994</i></p> <p>No. 18 Capital Flows to Asian and Pacific Developing Countries: Recent Trends and Future Prospects<br/>—<i>Min Tang and James Villafuerte, October 1995</i></p> |
|---|---|

## SPECIAL STUDIES, OUP (SS,Comm)

(Co-published titles; Available commercially through Oxford University Press Offices, Edward Elgar Publishing, and Palgrave MacMillan)

### FROM OXFORD UNIVERSITY PRESS:

Oxford University Press (China) Ltd  
18th Floor, Warwick House East  
Taikoo Place, 979 King's Road  
Quarry Bay, Hong Kong  
Tel (852) 2516 3222  
Fax (852) 2565 8491  
E-mail: [webmaster@oupchina.com.hk](mailto:webmaster@oupchina.com.hk)  
Web: [www.oupchina.com.hk](http://www.oupchina.com.hk)

1. Informal Finance: Some Findings from Asia  
*Prabhu Ghatte et. al., 1992*  
\$15.00 (paperback)
2. Mongolia: A Centrally Planned Economy in Transition  
*Asian Development Bank, 1992*  
\$15.00 (paperback)
3. Rural Poverty in Asia, Priority Issues and Policy Options  
*Edited by M.G. Quibria, 1994*  
\$25.00 (paperback)
4. Growth Triangles in Asia: A New Approach to Regional Economic Cooperation  
*Edited by Myo Thant, Min Tang, and Hiroshi Kakazu*  
1st ed., 1994 \$36.00 (hardbound)  
Revised ed., 1998 \$55.00 (hardbound)
5. Urban Poverty in Asia: A Survey of Critical Issues  
*Edited by Ernesto Pernia, 1994*  
\$18.00 (paperback)
6. Critical Issues in Asian Development: Theories, Experiences, and Policies  
*Edited by M.G. Quibria, 1995*  
\$15.00 (paperback)  
\$36.00 (hardbound)
7. Financial Sector Development in Asia  
*Edited by Shahid N. Zahid, 1995*  
\$50.00 (hardbound)
8. Financial Sector Development in Asia: Country Studies  
*Edited by Shahid N. Zahid, 1995*  
\$55.00 (hardbound)
9. Fiscal Management and Economic Reform in the People's Republic of China  
*Christine P.W. Wong, Christopher Heady, and Wing T. Woo, 1995*  
\$15.00 (paperback)
10. From Centrally Planned to Market Economies: The Asian Approach  
*Edited by Pradumna B. Rana and Naved Hamid, 1995*  
Vol. 1: Overview  
\$36.00 (hardbound)  
Vol. 2: People's Republic of China and Mongolia  
\$50.00 (hardbound)  
Vol. 3: Lao PDR, Myanmar, and Viet Nam  
\$50.00 (hardbound)
11. Current Issues in Economic Development: An Asian Perspective  
*Edited by M.G. Quibria and J. Malcolm Dowling, 1996*  
\$50.00 (hardbound)
12. The Bangladesh Economy in Transition  
*Edited by M.G. Quibria, 1997*  
\$20.00 (hardbound)
13. The Global Trading System and Developing Asia  
*Edited by Arvind Panagariya, M.G. Quibria, and Narhari Rao, 1997*  
\$55.00 (hardbound)
14. Social Sector Issues in Transitional Economies of Asia  
*Edited by Douglas H. Brooks and Myo Thant, 1998*  
\$25.00 (paperback)  
\$55.00 (hardbound)

15. Intergovernmental Fiscal Transfers in Asia: Current Practice and Challenges for the Future  
***Edited by Yun-Hwan Kim and Paul Smoke, 2003***  
\$15.00 (paperback)
16. Local Government Finance and Bond Markets  
***Edited by Yun-Hwan Kim, 2003***  
\$15.00 (paperback)

### FROM EDWARD ELGAR:

Marston Book Services Limited  
PO Box 269, Abingdon  
Oxon OX14 4YN  
United Kingdom  
Tel +44 1235 465500  
Fax +44 1235 465555  
Email: [direct.order@marston.co.uk](mailto:direct.order@marston.co.uk)  
Web: [www.marston.co.uk](http://www.marston.co.uk)

1. Reducing Poverty in Asia: Emerging Issues in Growth, Targeting, and Measurement  
*Edited by Christopher M. Edmonds, 2003*

### FROM PALGRAVE MACMILLAN:

Palgrave Macmillan Ltd  
Houndmills  
Basingstoke  
Hampshire RG21 6XS  
United Kingdom  
Tel: +44 (0)1256 329242  
Fax: +44 (0)1256 479476  
Email: [orders@palgrave.com](mailto:orders@palgrave.com)  
Web: [www.palgrave.com/home/](http://www.palgrave.com/home/)

1. Managing FDI in a Globalizing Economy  
Asian Experiences  
*Edited by Douglas H. Brooks and Hal Hill*  
2004
2. Poverty, Growth, and Institutions in Developing Asia  
*Edited by Ernesto M. Pernia and Anil B. Deolalikar,*  
2003

## SPECIAL STUDIES, ADB (SS, ADB)

(Published in-house; Available commercially through ADB Office of External Relations)

1. Rural Poverty in Developing Asia  
*Edited by M.G. Quibria*  
Vol. 1: Bangladesh, India, and Sri Lanka, 1994  
\$35.00 (paperback)  
Vol. 2: Indonesia, Republic of Korea, Philippines, and Thailand, 1996  
\$35.00 (paperback)
2. Gender Indicators of Developing Asian and Pacific Countries  
*Asian Development Bank, 1993*  
\$25.00 (paperback)
3. External Shocks and Policy Adjustments: Lessons from the Gulf Crisis  
*Edited by Naved Hamid and Shahid N. Zahid, 1995*  
\$15.00 (paperback)
4. Indonesia-Malaysia-Thailand Growth Triangle: Theory to Practice  
*Edited by Myo Thant and Min Tang, 1996*  
\$15.00 (paperback)
5. Emerging Asia: Changes and Challenges  
*Asian Development Bank, 1997*  
\$30.00 (paperback)
6. Asian Exports  
*Edited by Dilip Das, 1999*  
\$35.00 (paperback)  
\$55.00 (hardbound)
7. Development of Environment Statistics in Developing Asian and Pacific Countries  
*Asian Development Bank, 1999*  
\$30.00 (paperback)
8. Mortgage-Backed Securities Markets in Asia  
*Edited by S.Ghon Rhee & Yutaka Shimomoto, 1999*  
\$35.00 (paperback)
9. Rising to the Challenge in Asia: A Study of Financial Markets  
*Asian Development Bank*  
Vol. 1: An Overview, 2000 \$20.00 (paperback)  
Vol. 2: Special Issues, 1999 \$15.00 (paperback)  
Vol. 3: Sound Practices, 2000 \$25.00 (paperback)  
Vol. 4: People's Republic of China, 1999 \$20.00 (paperback)  
Vol. 5: India, 1999 \$30.00 (paperback)  
Vol. 6: Indonesia, 1999 \$30.00 (paperback)  
Vol. 7: Republic of Korea, 1999 \$30.00 (paperback)  
Vol. 8: Malaysia, 1999 \$20.00 (paperback)  
Vol. 9: Pakistan, 1999 \$30.00 (paperback)  
Vol. 10: Philippines, 1999 \$30.00 (paperback)  
Vol. 11: Thailand, 1999 \$30.00 (paperback)  
Vol. 12: Socialist Republic of Viet Nam, 1999 \$30.00 (paperback)
10. Corporate Governance and Finance in East Asia: A Study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand  
*J. Zhuang, David Edwards, D. Webb, & Ma. Virginita Capulong*  
Vol. 1: A Consolidated Report, 2000 \$10.00 (paperback)  
Vol. 2: Country Studies, 2001 \$15.00 (paperback)
11. Financial Management and Governance Issues  
*Asian Development Bank, 2000*  
Cambodia \$10.00 (paperback)  
People's Republic of China \$10.00 (paperback)  
Mongolia \$10.00 (paperback)  
Pakistan \$10.00 (paperback)  
Papua New Guinea \$10.00 (paperback)  
Uzbekistan \$10.00 (paperback)  
Viet Nam \$10.00 (paperback)  
Selected Developing Member Countries \$10.00 (paperback)
12. Government Bond Market Development in Asia  
*Edited by Yun-Hwan Kim, 2001*  
\$25.00 (paperback)
13. Intergovernmental Fiscal Transfers in Asia: Current Practice and Challenges for the Future  
*Edited by Paul Smoke and Yun-Hwan Kim, 2002*  
\$15.00 (paperback)
14. Guidelines for the Economic Analysis of Projects  
*Asian Development Bank, 1997*  
\$10.00 (paperback)
15. Guidelines for the Economic Analysis of Telecommunications Projects  
*Asian Development Bank, 1997*  
\$10.00 (paperback)
16. Handbook for the Economic Analysis of Water Supply Projects  
*Asian Development Bank, 1999*  
\$10.00 (hardbound)
17. Handbook for the Economic Analysis of Health Sector Projects  
*Asian Development Bank, 2000*  
\$10.00 (paperback)
18. Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects  
*Asian Development Bank, 2001*  
\$10.00 (paperback)
19. Handbook for Integrating Risk Analysis in the Economic Analysis of Projects  
*Asian Development Bank, 2002*  
\$10.00 (paperback)
20. Guidelines for the Financial Governance and Management of Investment Projects Financed by the Asian Development Bank  
*Asian Development Bank, 2002*  
\$10.00 (paperback)
21. Handbook on Environment Statistics  
*Asian Development Bank, 2002*  
\$10.00 (hardback)
22. Defining an Agenda for Poverty Reduction, Volume 1  
*Edited by Christopher Edmonds and Sara Medina, 2002*  
\$15.00 (paperback)
23. Defining an Agenda for Poverty Reduction, Volume 2  
*Edited by Isabel Ortiz, 2002*  
\$15.00 (paperback)
24. Economic Analysis of Policy-based Operations: Key Dimensions  
*Asian Development Bank, 2003*  
\$10.00 (paperback)

## SPECIAL STUDIES, COMPLIMENTARY (SSC)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

1. Improving Domestic Resource Mobilization Through Financial Development: Overview *September 1985*
2. Improving Domestic Resource Mobilization Through Financial Development: Bangladesh *July 1986*
3. Improving Domestic Resource Mobilization Through Financial Development: Sri Lanka *April 1987*
4. Improving Domestic Resource Mobilization Through Financial Development: India *December 1987*
5. Financing Public Sector Development Expenditure in Selected Countries: Overview *January 1988*
6. Study of Selected Industries: A Brief Report *April 1988*
7. Financing Public Sector Development Expenditure in Selected Countries: Bangladesh *June 1988*
8. Financing Public Sector Development Expenditure in Selected Countries: India *June 1988*
9. Financing Public Sector Development Expenditure in Selected Countries: Indonesia *June 1988*
10. Financing Public Sector Development Expenditure in Selected Countries: Nepal *June 1988*
11. Financing Public Sector Development Expenditure in Selected Countries: Pakistan *June 1988*
12. Financing Public Sector Development Expenditure in Selected Countries: Philippines *June 1988*
13. Financing Public Sector Development Expenditure in Selected Countries: Thailand *June 1988*
14. Towards Regional Cooperation in South Asia: ADB/EWC Symposium on Regional Cooperation in South Asia *February 1988*
15. Evaluating Rice Market Intervention Policies: Some Asian Examples *April 1988*
16. Improving Domestic Resource Mobilization Through Financial Development: Nepal *November 1988*
17. Foreign Trade Barriers and Export Growth *September 1988*
18. The Role of Small and Medium-Scale Industries in the Industrial Development of the Philippines *April 1989*
19. The Role of Small and Medium-Scale Manufacturing Industries in Industrial Development: The Experience of Selected Asian Countries *January 1990*
20. National Accounts of Vanuatu, 1983-1987 *January 1990*
21. National Accounts of Western Samoa, 1984-1986 *February 1990*
22. Human Resource Policy and Economic Development: Selected Country Studies *July 1990*
23. Export Finance: Some Asian Examples *September 1990*
24. National Accounts of the Cook Islands, 1982-1986 *September 1990*
25. Framework for the Economic and Financial Appraisal of Urban Development Sector Projects *January 1994*
26. Framework and Criteria for the Appraisal and Socioeconomic Justification of Education Projects *January 1994*
27. Guidelines for the Economic Analysis of Telecommunications Projects *Asian Development Bank, 1997*
28. Guidelines for the Economic Analysis of Water Supply Projects *Asian Development Bank, 1998*
29. Investing in Asia *Co-published with OECD, 1997*
30. The Future of Asia in the World Economy *Co-published with OECD, 1998*
31. Financial Liberalisation in Asia: Analysis and Prospects *Co-published with OECD, 1999*
32. Sustainable Recovery in Asia: Mobilizing Resources for Development *Co-published with OECD, 2000*
33. Technology and Poverty Reduction in Asia and the Pacific *Co-published with OECD, 2001*
34. Asia and Europe *Co-published with OECD, 2002*